

# **Descriptive Technical Documentation**

**- Model-dependent -**

## **DTD no. 62-7881**

**Model(s): G 7881, G 7882, G 7882 CD, G 7883,  
G 7883 CD**

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## A Warning and Safety Instructions

### 1 General Information

**Danger!**

- The machine should not be installed or operated in any area where there is a risk of explosion or possibility of freezing conditions.
- The operator is responsible for ensuring that all containers are clearly marked with suitable warnings when detergents and disinfectants are transferred from large containers into smaller ones for use at the installation site.
- The warnings and instructions on detergent and disinfectant containers must be followed closely. These chemicals may be corrosive and can cause irritation. Protective gloves and goggles must be worn.
- Organic solvents should never be used, because there may be a risk of explosion in certain conditions.
- Inhalation of powder detergents must be avoided. If detergents are swallowed or inhaled they may cause burning in the mouth and throat, and may even inhibit breathing.
- If the machine is being used for decontamination as ordered by the authorities, then the steam condenser and its connections to the cabinet and the drain must be disinfected with a suitable agent whenever any repairs are carried out or parts replaced.
- Water in the machine is not suitable for drinking.
- If the machine has been operated with high temperatures ( $> 158^{\circ}\text{F}/70^{\circ}\text{C}$ ), then there is a risk of scalding when it is opened. Baskets and inserts should be allowed to cool before removal. Hot-water residues from containers in the cabinet should be drained off carefully.
- Washer-disinfectors are not splash-protected, so they and their immediate surroundings must not be cleaned with water hoses or high-pressure cleaners.
- Before starting any service work, disconnect the machine from the power supply. Measures must be taken to ensure that power cannot be switched on again accidentally.
- Even with the machine shut off, voltage may be applied to some components.
- When the casing is removed, sharp edges may be exposed and care must be taken to avoid injury.

**Note**

- Installation and setup may only be carried out by specially trained and authorized technicians in accordance with all appropriate regulations.
- Servicing, modification, testing and maintenance of electrical appliances should only be carried out in accordance with all appropriate legal requirements, accident prevention regulations and valid standards. All regulations of the appropriate utility supply companies and standards relating to safety (not limited to electrical safety) are to be complied with.
- After any repair or service work, a general and model-specific visual and operational check must be performed.
- On machines with a ground connection, touch current measurements are to be performed on any conductive parts not connected to ground.
- When carrying out measurements on an electronic module connected to the power supply, always use narrow measuring probes. Contacts are very closely spaced and using thicker probes may cause undesired short circuits.
- Electrical connection should be made via a suitable isolator, with an "On/Off" button easily accessible for service work.
- Washer-disinfectors whose wash programs are controlled by a programmable electronic control may **only** be serviced and repaired by specially trained Medical Product Advisers in accordance with all applicable medical product regulations. Every software modification or repair of components affecting disinfection parameters (temperature, contact time, etc.) must be recorded in a protocol. For more information, see the appropriate medical product book.

## **B Modification History**

<b>When?</b>	<b>Who?</b>	<b>What?</b>
06.03.2009	Reinhard Bremehr	<b>Version 9</b>
03.12.2008	Reinhard Bremehr	<b>Version 8</b>
06.03.2008	Reinhard Bremehr	<b>Version 7</b>
28.08.2007	Reinhard Bremehr	<b>Version 6</b>
21.05.2007	Reinhard Bremehr	<b>Version 5</b>
17.04.2007	Reinhard Bremehr	<b>Version 4</b>
30.11.2005	Reinhard Bremehr	<b>Version 3</b>
11.06.2002	Reinhard Bremehr	Entire BTD completely revised.
10.12.2001	Reinhard Bremehr	
05.11.2001	Reinhard Bremehr	
15.10.2001	Reinhard Bremehr	
12.10.2001	Reinhard Bremehr	
04.06.2001	Reinhard Bremehr	Initial compilation

## C Technical Data

These washer-disinfectors are supplied as free-standing models with lids. The standard built-in depth is 23.6 inches (600 millimeters). The machine connections are in the back, but utility connections should be made from the side. Connections for the connection of a Miele DOS module (two DOS modules for the G 7882) are provided at the back of the appliance. The DOS 10/30 dispenser is installed as standard. If the machine is to be installed under a countertop, an additional cover plate is required if the countertop is not sealed against water.

Machine Data for G 7881, G 7882, G 7883		
	Non-CD models	CD models
Height (with lid)	33.5" (850mm)	33.5" (850mm)
Building-under height (without lid)	32.3" (820mm)	32.3" (820mm)
Width	23.5" (598mm)	35.3" (900mm)
Depth	23.6" (600mm)	27.5" (700cm)
Gross weight	176 lbs (80 kg)	352 lbs (160 kg)
Net weight	154 lbs (70 kg)	309 lbs (140 kg)
Max. floor load in operation	280 lbs (1250N)	280 lbs (1250N)
Min. access depth	23.5" (598mm)	23.5" (598mm)
Min. access height	32.7" (830mm)	32.7" (830mm)

**Table 1:** Machine Data

Electrical connection via a socket is to be carried out in accordance with national regulations. The socket must be readily accessible after the installation.

A fixed electrical connection is possible via an on-site main switch (lockable in the off state) providing complete isolation from the power supply. The contact gap must be at least 0.1 inches (3 millimeters).

An equipotential bond should be provided, e.g., with 0.02 in<sup>2</sup> (10 mm<sup>2</sup>) cross section.

### Connection variations for power and water:

The machine is wired for 3-phase electrical installation, but it can be rewired for single-phase electrical installation, if necessary.

Electrical Connection - US Models Only			
Variant	Voltage/Frequency	Fuse rating (A)	AWG wire
Single-phase	208VAC/60Hz	2 x 30	10/3
Three-phase	208VAC/60Hz	3 x 20	12/4

**Table 2:** Electrical Connection Variations

These machines are built in accordance with DVGW guidelines and have DVGW test certification. They can therefore be connected directly to a water supply provided in accordance with DIN 1988.

After the connection has been made and the water supply checked, the on-site shutoff valves should be closed again so that the valves and connection hoses are not under pressure.

For technical application reasons, the appliance is supplied as standard for connection to cold water only. The inlet hoses (water inlet and steam condenser) must only be connected to the cold-water inlets. See the installation manual for more information.

Large surface area filters are included with the machine for installing between the inlet and the inlet hose. (See the filter cleaning instructions in the operating manual.)

The inlet hose must **not** be shortened or damaged in any way.

Water Connection - US Models Only						
	Flow Pressure <sup>2)3)</sup>			Flow Rate	Connection (On-Site)	Hose length (supplied)
Hot/ cold water <sup>1)</sup>	Min. 10 psi (0.7 bar)	Nominal 25 psi (1.7 bar)	Max. 145 psi (10 bar)	2.1 gal/min (8 L/min)	G 3/4", male	5'6", terminating in 3/4" female thread
Demin-eralized water (optional) <sup>1)</sup>	Min. 10 psi (0.7 bar)	Nominal 25 psi (1.7 bar)	Max. 145 psi (10 bar)	2.1 gal/min (8 L/min)	G 3/4" male	5'6", terminating in 3/4" female thread

**Table 3:** Water Connection Variations (US Only)

- <sup>1)</sup> The inlet hoses (cold water, DI water ("H<sub>2</sub>O pur") and/or steam condenser) may only be connected to cold water.
- <sup>2)</sup> With flow pressure below 29 psi, the water intake time is extended (maximum 5 minutes).
- <sup>3)</sup> If the water pressure is not between 10 and 145 psi, the **Fill/Drain** LED may come on and the fault code "F.E" will appear in the display. If this occurs, contact Miele's technical service department for advice.

Drain Connection - G 7881, G 7882, G 7883	
On-site drain connection dia. (mm)	DN 50 (2.0")
Max. drain pump head height above base of machine	3.3' (1m)
Max. brief drain flow rate	13.1 gal/min (50 L/min)
Drain hose inner dia. <sup>1)</sup>	7/8"
Drain hose length (supplied)	59" (1500 mm)
Steam condenser	Drained internally through existing drain hose

**Table 4:** G 7881, G 7882, G 7883 Drain Connection

- <sup>1)</sup> The Poly-Rex drain hose and associated clips are provided as standard. The drain hose must not be shortened. Floor drains are permissible. An extension of up to 13.1 feet (4 meters) is available.

<b>Drain Connection - G 7883 CD</b>	
On-site drain connection dia. (mm)	DN 50 (2.0")
Max. drain pump head height above base of machine	3.3' (1m)
Max. brief drain flow rate	13.1 gal/min (50 L/min)
Drain hose inner dia. <sup>1)</sup>	7/8"
Drain hose length (supplied)	59" (1500 mm)
Steam condenser	Separate drain hose and pump

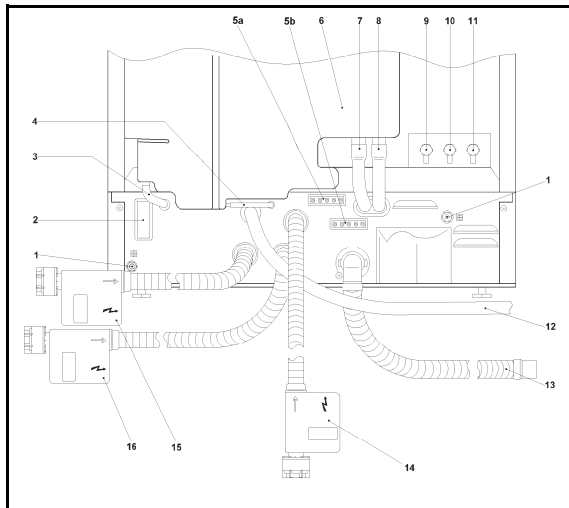
**Table 5:** Drain Connection, G 7883 CD

- <sup>1)</sup> The Poly-Rex drain hose and associated clips are provided as standard. The drain hose must not be shortened. Floor drains are permissible. An extension of up to 13.1 feet (4 meters) is available.

## D Layout of Electrical Components

G 7881, G 7882, G 7883

Rear view. Some connections are optional.



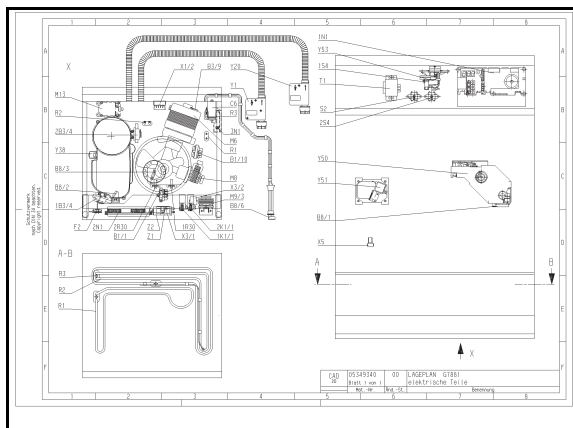
### Layout 1

- |    |  |
|----|--|
| 1  | Ground screw   |
| 2  | Overflow, water intake vent  |
| 3  | Condensate overflow  |
| 4  | Condensate drain   |
| 5a | Connection X1/2 for external DOS module (detergent)                                      |
| 5b | Connection 2X1/2 for external DOS module (chemical disinfection)<br>(depending on model) |
| 6  | Steam condenser  |
| 7  | Steam condenser drain  |
| 8  | Steam condenser intake   |
| 9  | Connection for neutralization, detergent or chemical disinfection                        |
| 10 | Connection for neutralization, detergent or chemical disinfection                        |
| 11 | Connection for neutralization, detergent or chemical disinfection                        |
| 12 | Power cord   |
| 13 | Cabinet drain hose   |
| 14 | Hot water  |
| 15 | Demineralized water  |
| 16 | Cold water   |



#### G 7881

Components in base and door:



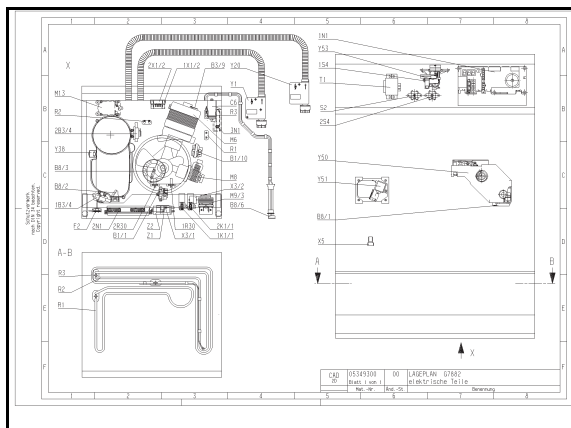
#### Layout 2

B1/1	Water intake level switch
B1/7	Detergent level level switch (not shown)
B1/10	Heating level switch
1B3/4	Flow meter
2B3/4	Flow meter
B3/9	Speed sensor
B8	Float switch
B8/1	Rinse aid float switch
B8/2	Reactivation salt float switch
B8/3	Overflow float switch
B8/6	Acidic agent float switch
C6	Circulation pump capacitor
F2	Temperature limiter
1F3	Winding protection (not shown)
2F3	Winding protection (not shown)
1K1/1	Heater relay (water + pulsed drying)
2K1/1	Heater relay (water only)
M6	Circulation pump
M7	Intake pump
M8	Drain pump
M9/3	Acidic agent dispenser pump
M9/5	Detergent dispenser pump (not shown)
M13	Condensate pump
1N1	Control module EGPL 081
2N1	Additional module EZL 031/081
3N1	Printer module EZI 040
R1	Heater element 1 - Water + drying
R2	Heater element 2 - Water
R3	Heater element 3 - Water
1R30	NTC temperature sensor - Water
2R30	NTC temperature check sensor - Water
3R30	NTC temperature sensor - Air (not shown)

S2	Main switch
1S4	Door switch (door state)
2S4	Door switch (open door)
T1	Transformer
X1/2	Dispenser system socket
X3/1	Terminal block
X3/2	Connector for heater elements
X5	Connector
X5/2	Drying unit connector (not shown)
Y1	Double solenoid (WaterProof system) - Cold water
Y12	Double solenoid (WaterProof system) - Hot water
Y20	Double solenoid (WaterProof system) - Demineralized water
1Y22	Steam condenser solenoid (not shown)
2Y22	Steam condenser solenoid (not shown)
Y38	Reactivation solenoid valve
Y50	Liquid dispenser
Y51	Powder detergent dispenser
Y53	Release magnet
Z1	Interference suppression filter
Z2	Interference suppression capacitor

#### G 7882

Components in base and door:



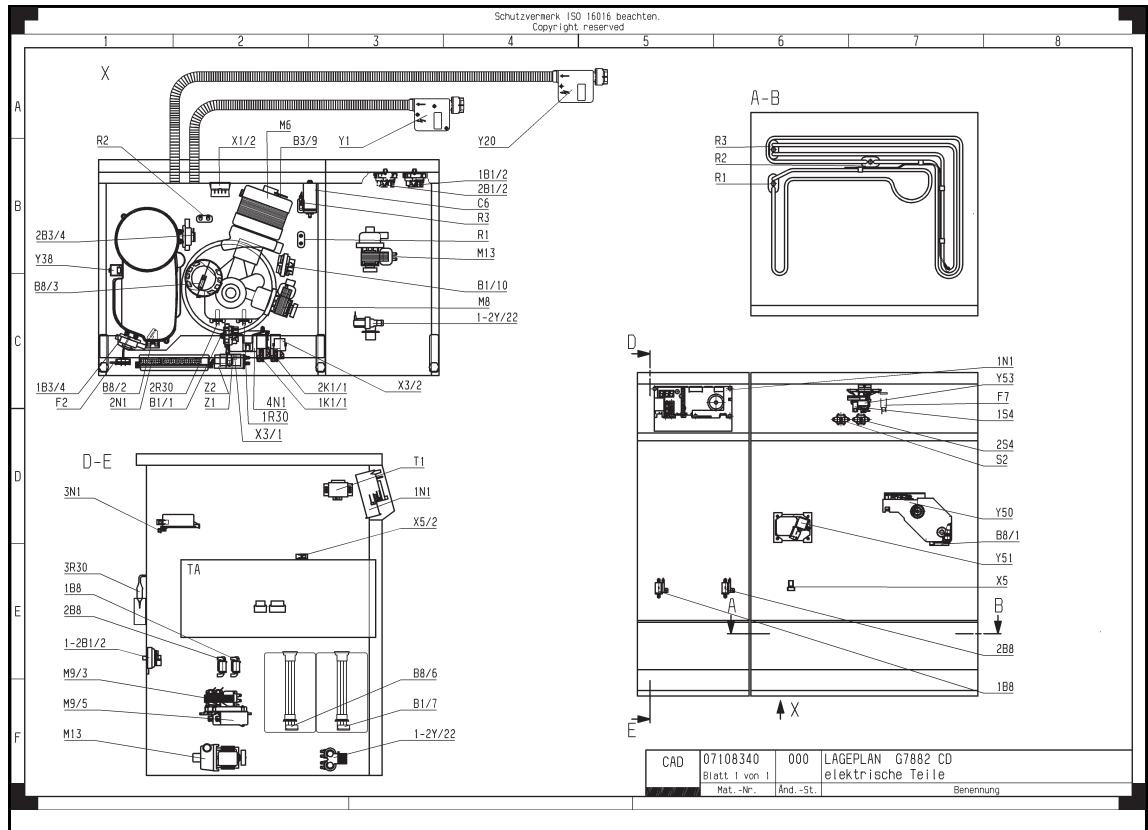
#### Layout 3

B1/1	Water intake level switch
B1/7	Detergent level level switch
B1/10	Heating level switch
1B3/4	Flow meter
2B3/4	Flow meter
B3/9	Speed sensor
B8	Float switch
B8/1	Rinse aid float switch
B8/2	Reactivation salt float switch
B8/3	Overflow float switch
B8/6	Acidic agent float switch
C6	Circulation pump capacitor
F2	Temperature limiter
1F3	Winding protection
2F3	Winding protection
1K1/1	Heater relay (water + pulsed drying)
2K1/1	Heater relay (water only)
M6	Circulation pump
M7	Intake pump
M8	Drain pump
M9/3	Acidic agent dispenser pump
M9/5	Detergent dispenser pump
M13	Condensate pump
1N1	Control module EGPL 081
2N1	Additional module EZL 031/081
3N1	Printer module EZI 040
R1	Heater element 1 - Water + drying
R2	Heater element 2 - Water
R3	Heater element 3 - Water
1R30	NTC temperature sensor - Water
2R30	NTC temperature check sensor - Water
3R30	NTC temperature sensor - Air

S2	Main switch
1S4	Door switch (door state)
2S4	Door switch (open door)
T1	Transformer
1X1/2	Dispenser system socket
2X1/2	Dispenser system socket
X3/1	Terminal block
X5	Connector
X5/2	Drying unit connector
Y1	Double solenoid (WaterProof system) - Cold water
Y12	Double solenoid (WaterProof system) - Hot water
Y20	Double solenoid (WaterProof system) - Demineralized water
1Y22	Steam condenser solenoid
2Y22	Steam condenser solenoid
Y38	Reactivation solenoid
1Y50	Liquid dispenser
2Y50	Liquid dispenser
Y51	Powder detergent dispenser
Y53	Release magnet
Z1	Interference suppression filter
Z2	Interference suppression capacitor

#### G 7882 CD

Components in base and door:



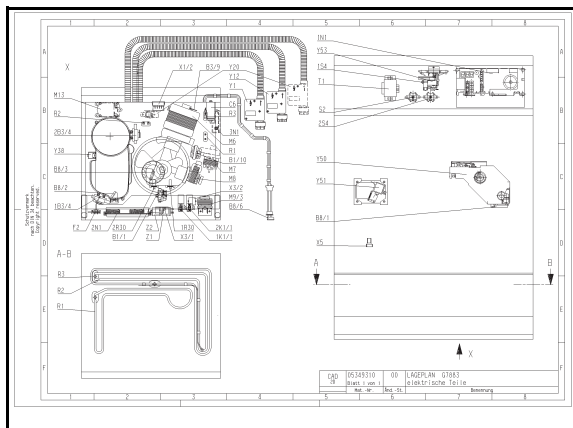
#### Layout 4

1B1/2	Level switch, pressure monitor
2B1/2	Level switch, pressure monitor
B1/1	Water intake level switch
B1/7	Detergent level level switch
B1/10	Heating level switch
1B3/4	Flow meter
2B3/4	Flow meter
B3/9	Speed sensor
B8	Float switch
1B8	Float switch, liquid monitor
2B8	Float switch, liquid monitor
B8/1	Rinse aid float switch
B8/2	Reactivation salt float switch
B8/3	Overflow float switch
B8/6	Acidic agent float switch
C6	Circulation pump capacitor
F2	Temperature limiter
F7	Fine-wire fuse
1F3	Winding protection
2F3	Winding protection
1K1/1	Heater relay (water + pulsed drying)

2K1/1	Heater relay (water only)
M6	Circulation pump
M7	Intake pump
M8	Drain pump
M9/3	Acidic agent dispenser pump
M9/5	Detergent dispenser pump
M13	Condensate pump
1N1	Control module EGPL 081
2N1	Additional module EZL 031/081
3N1	Printer module EZI 040
4N1	Dispenser relay control module EZQ 081
R1	Heater element 1 - Water + drying
R2	Heater element 2 - Water
R3	Heater element 3 - Water
1R30	NTC temperature sensor - Water
2R30	NTC temperature check sensor - Water
3R30	NTC temperature sensor - Air
S2	Main switch
1S4	Door switch (door state)
2S4	Door switch (open door)
TA	Drying unit
T1	Transformer
1X1/2	Dispenser system socket
2X1/2	Dispenser system socket
X3/1	Terminal block
X5	Coupler
X5/2	Drying unit connector
Y1	Double solenoid (WaterProof system) - Cold water
Y12	Double solenoid (WaterProof system) - Hot water
Y20	Double solenoid (WaterProof system) - Demineralized water
1Y22	Steam condenser solenoid
2Y22	Steam condenser solenoid
Y38	Reactivation solenoid
1Y50	Liquid dispenser
2Y50	Liquid dispenser
Y51	Powder detergent dispenser
Y53	Release magnet
Z1	Interference suppression filter
Z2	Interference suppression capacitor

#### G 7883

Components in base and door:



#### Layout 5

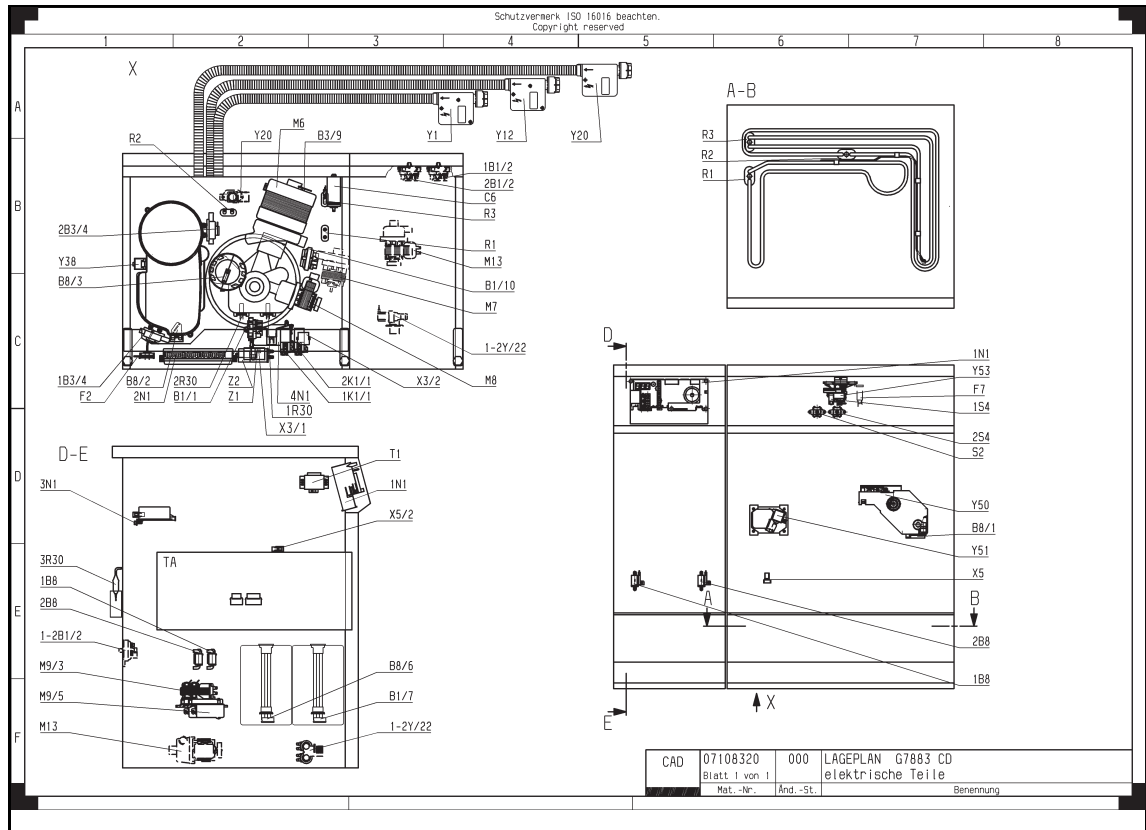
B1/1	Water intake level switch
B1/2	Overflow level switch
B1/7	Detergent level switch
B1/10	Heating level switch
1B3/4	Flow meter
2B3/4	Flow meter
B3/9	Speed sensor
B8	Float switch
B8/1	Rinse aid float switch
B8/2	Reactivation salt float switch
B8/3	Overflow float switch
B8/6	Acidic agent float switch
C6	Circulation pump capacitor
F2	Temperature limiter
1K1/1	Heater relay (water + pulsed drying)
2K1/1	Heater relay (water only)
M6	Circulation pump
M7	Intake pump
M8	Drain pump
M9/3	Acidic agent dispenser pump
M13	Condensate pump
1N1	Control module EGPL 081
2N1	Additional module EZL 031/081
3N1	Printer module EZI 040
R1	Heater element 1 - Water + drying
R2	Heater element 2 - Water
R3	Heater element 3 - Water
1R30	NTC temperature sensor - Water
2R30	NTC temperature check sensor - Water
3R30	NTC temperature sensor - Air
S2	Main switch
1S4	Door switch (door state)



2S4	Door switch (open door)
T1	Transformer
X1/2	Dispenser system socket
X3/1	Terminal block
X3/2	Connector for heater elements
X5	Connector
X5/2	Drying unit connector
Y1	Double solenoid (WaterProof system) - Cold water
Y12	Double solenoid (WaterProof system) - Hot water
Y20	Double solenoid (WaterProof system) - Demineralized water
1Y22	Steam condenser solenoid
2Y22	Steam condenser solenoid
Y38	Reactivation solenoid valve
Y50	Liquid dispenser
Y51	Powder detergent dispenser
Y53	Release magnet
Z1	Interference suppression filter
Z2	Interference suppression capacitor

#### G 7883 CD

#### Components in base and door

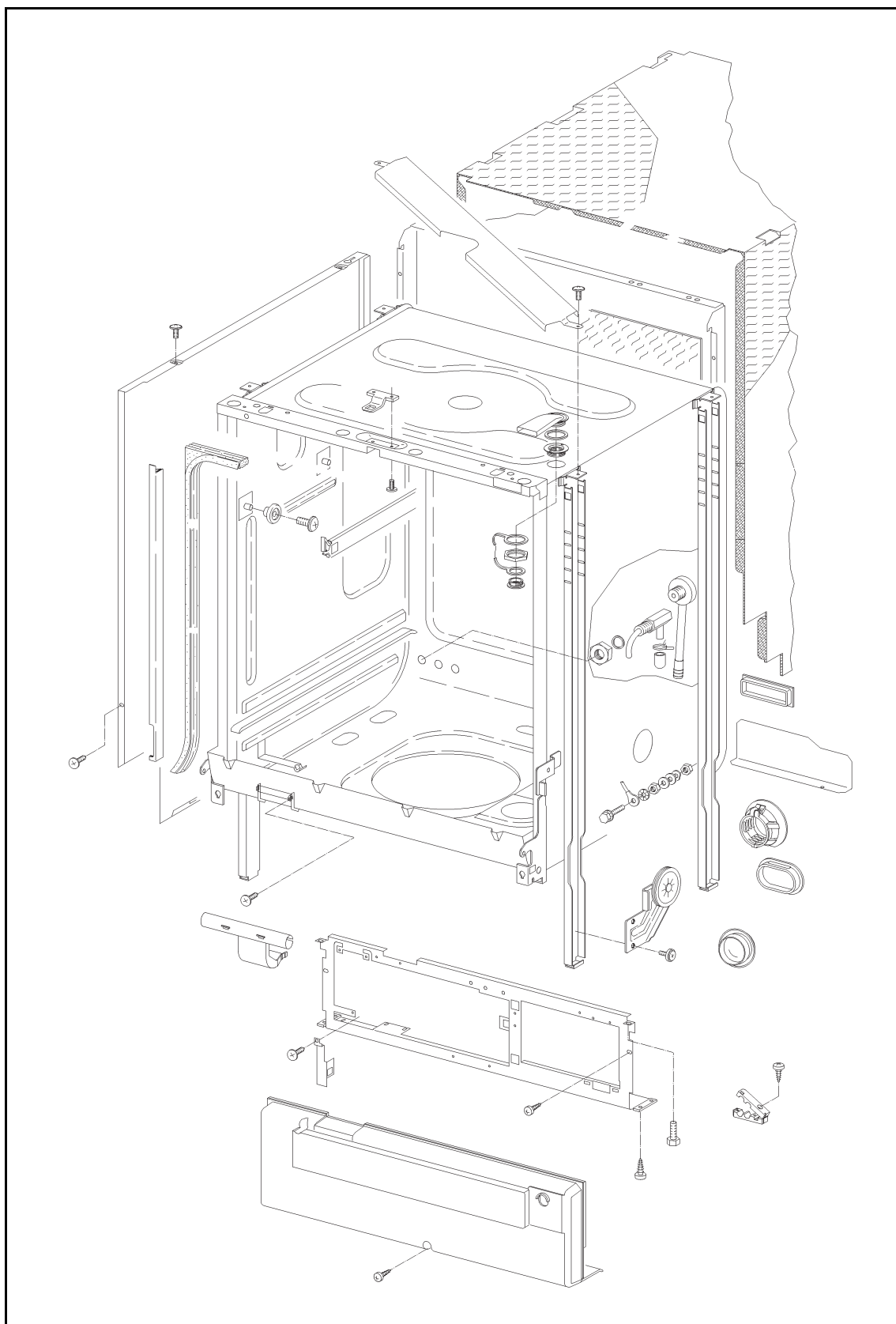


#### Layout 6

B1/1	Water intake level switch
B1/2	Overflow level switch
B1/7	Detergent level switch
B1/10	Heating level switch
1B3/4	Flow meter
2B3/4	Flow meter
B3/9	Speed sensor
B8	Float switch
B8/1	Rinse aid float switch
B8/2	Reactivation salt float switch
B8/3	Overflow float switch
B8/6	Acidic agent float switch
C6	Circulation pump capacitor
F2	Temperature limiter
1K1/1	Heater relay (water + pulsed drying)
2K1/1	Heater relay (water only)
M6	Circulation pump
M7	Intake pump
M8	Drain pump
M9/3	Acidic agent dispenser pump
M9/5	Detergent dispenser pump

M13	Condensate pump
1N1	Control module EGPL 081
2N1	Additional module EZL 031/081
3N1	Printer module EZI 040
R1	Heater element 1 - Water + drying
R2	Heater element 2 - Water
R3	Heater element 3 - Water
1R30	NTC temperature sensor - Water
2R30	NTC temperature check sensor - Water
3R30	NTC temperature sensor - Air
S2	Main switch
1S4	Door switch (door state)
2S4	Door switch (open door)
T1	Transformer
X1/2	Dispenser system socket
X3/1	Terminal block
X3/2	Connector for heater elements
X5	Connector
X5/2	Drying unit connector
Y1	Double solenoid (WaterProof system) - Cold water
Y12	Double solenoid (WaterProof system) - Hot water
Y20	Double solenoid (WaterProof system) - Demineralized water
1Y22	Steam condenser solenoid
2Y22	Steam condenser solenoid
Y38	Reactivation solenoid
Y50	Liquid dispenser
Y51	Powder detergent dispenser
Y53	Release magnet
Z1	Interference suppression filter
Z2	Interference suppression capacitor

## 010 Inner Cabinet



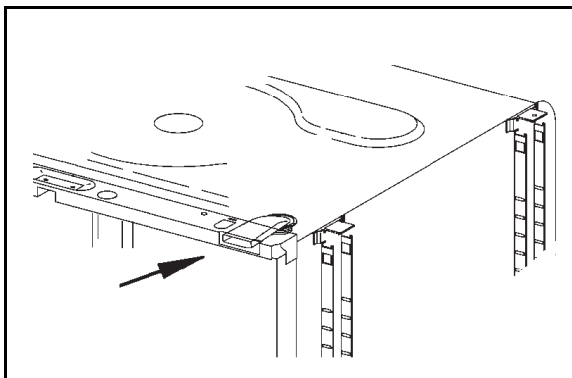
## **1      Technical Data**

Washer-disinfectors from the G 78xx series are of sub-frame and panel construction. The individual side panels can be removed without affecting the stability of the machine. Stability is ensured by precisely fitted transverse struts.

## 2 Function

### 2.1 Access for Measuring Sensors

In order to be able to carry out, e.g., temperature measurements when a cleaning program is in operation, measuring sensors can be fed to the cabinet interior via the special access test port between the door and the lid. During normal operation, this access point must be sealed with the stopper in the cabinet interior.



**Fig. 1:** Test Port for Measuring Sensors

## 3 Fault Repair

### 3.1 Whistling Noises From Door Seal

G 7882 CD, G 7883 CD

#### Cause

Fan speed in drying unit set too high.

#### Remedy

🔧 095 2.3 Setting the Fan Speed (Air Throughput).

#### Note

If the fan speed is reduced too much, then the drying time will be extended.

### 3.2 Door Seal Bulges

#### Cause

Improper detergent use over time may cause damage to the seals in the machine. The use of rinsing agents (when these contain paraffin oils) in the final rinse can also cause the seal to swell after only a short period of time.

#### Remedy

🔧 Use a different detergent.

🔧 To protect seals, disinfecting alkaline detergents with a high proportion of active chlorine should not be used at temperatures above 176°F (80°C).



### 3.3 Door Cannot Be Locked

**Cause**

Door seal was incorrectly installed and protrudes forwards.

**Remedy**

✂ Remove the door seal and install it correctly.

**Cause**

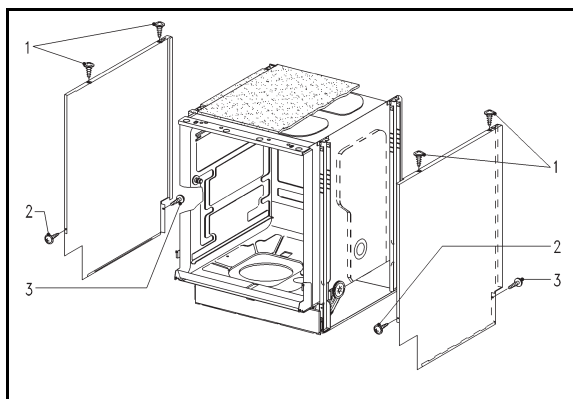
Locking plate not correctly adjusted.

**Remedy**

✂ Locking Plate Adjustment, 010 4.5.

## 4 Service

### 4.1 Side Panel Removal



**Fig. 2:** Side Panels, Cabinet

- ✂ Removing the Lid, 022 4.3.
- ✂ Open the door.
- ✂ Remove the appropriate screws, 010 Fig. 2.
- ✂ Remove the appropriate side panel.

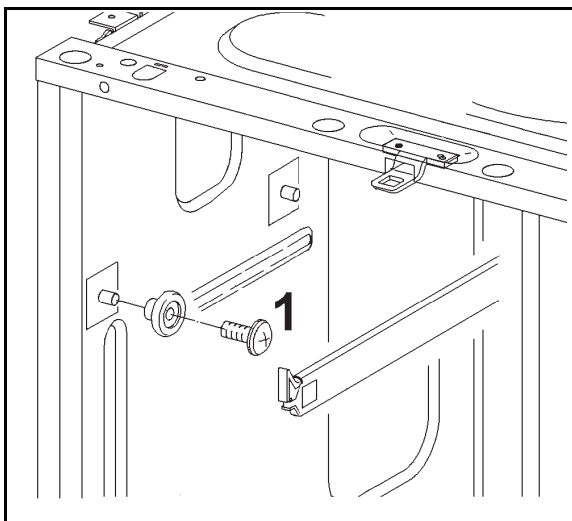
#### Note

In some G 7881 models, the serial interface mounting bracket may also have to be removed from the left-hand side panel (2 additional screws).

#### Note

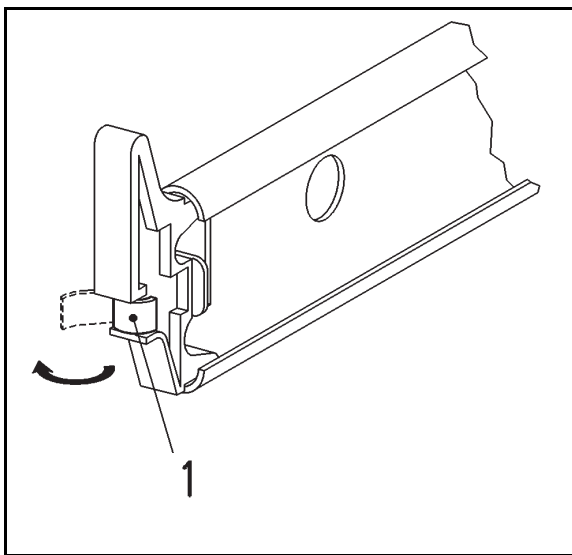
When re-installing, the bottom groove of the side panels must rest on the edge of the drip pan.

## 4.2 Replacing the Support Rollers

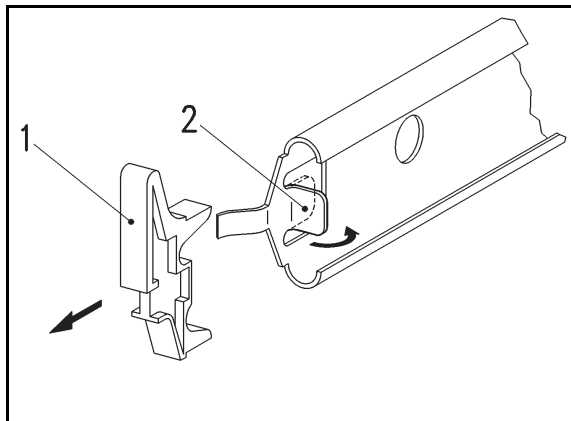


**Fig. 3: Roller with Basket Guide**

- ✂ Slide out the basket guide until the screws (010 Fig. 3, Pos. 1) are visible through the holes in the basket guide.
- ✂ Remove the screws.
- ✂ Remove the basket guide.

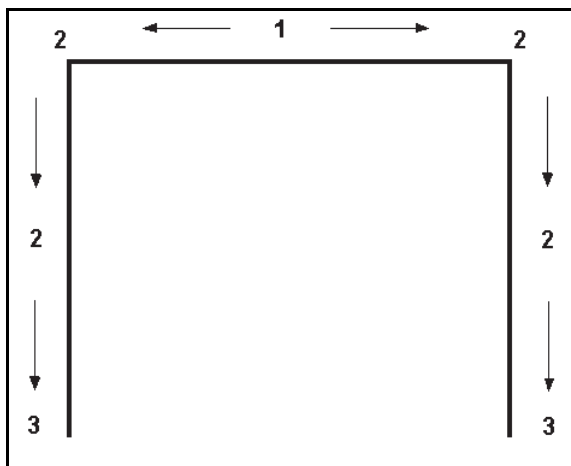


**Fig. 4: Basket Guide Stopper**

**Fig. 5: Stopper Removal**

- ✂ Open the left holder tag (as indicated by the arrow); see 010 Fig. 4, Pos. 1.
- ✂ Pull the end stop out to remove. See 010 Fig. 5, Pos. 1.
- ✂ Open the right holder tag, as indicated by the arrow. See 010 Fig. 5, Pos. 2.
- ✂ Remove the old support rollers.
- ✂ Install new support rollers in the basket guide.
- ✂ Screw the basket guide with new rollers back into place.

### 4.3 Door Seal Replacement

**Fig. 6: Door Seal Install Guide**

- ✂ Open the door.
- ✂ Remove the old seal.
- ✂ Clean the groove around the cabinet.
- ✂ Press an appropriate sealing compound into the corners of the groove.
- ✂ Install the new seal in accordance with 010 Fig. 6. First press the **middle** of the new seal into the groove below the locking plate, 010 Fig. 6, Pos. 1.

- ✂ Then press the seal into the corners, 010 Fig. 6, Pos. 2. The seal lip should point inwards.
- ✂ Then, working towards the middle, **evenly** press the seal into its groove, 010 Fig. 6, Pos. 3.

**Note**

The standard door seal can be replaced with a grease-resistant one if working with lots of oils.

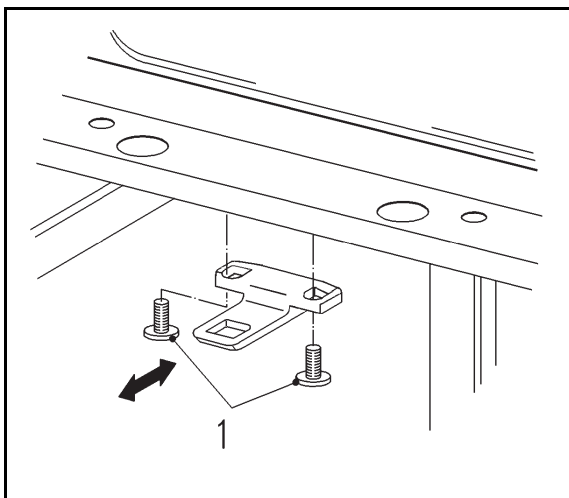
#### 4.4 Bottom Door Seal Replacement

- ✂ Open the door to a 45° angle.
- ✂ Hold the backing plate (screws are tiny).
- ✂ Remove the four small Phillips screws.
- ✂ Remove the bottom door seal.
- ✂ When re-installing the seal, hold the door open at a 45° angle to keep the backing plate in place.

**Note**

Grease-resistant seals are available.

#### 4.5 Locking Plate Adjustment

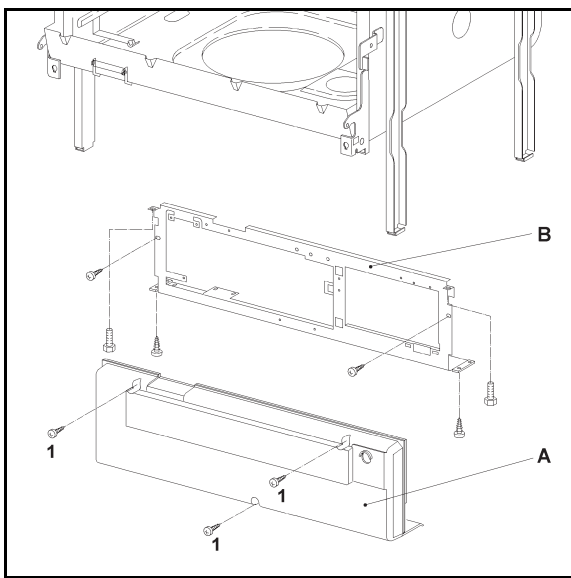


**Fig. 7:** Locking Plate

- ✂ Ensure that the machine is installed perfectly level, and adjust it if necessary.
- ✂ Loosen the two flat screws (010 Fig. 7, Pos. 1).

- ✎ Adjust the locking plate in the direction of the arrow as required, keeping it **straight**.
- ✎ Tighten the screws.

## 4.6 Toekick Removal



**Fig. 8: Toekick Removal**

- ✎ Service Panel Removal, 022 4.2.
- ✎ Remove the retaining screws (010 Fig. 8, Pos. 1). Remove the toekick.

### Note

When re-installing, ensure that the red-brown reset button of temperature limiter F2 can still be activated through the hole in the cover piece.

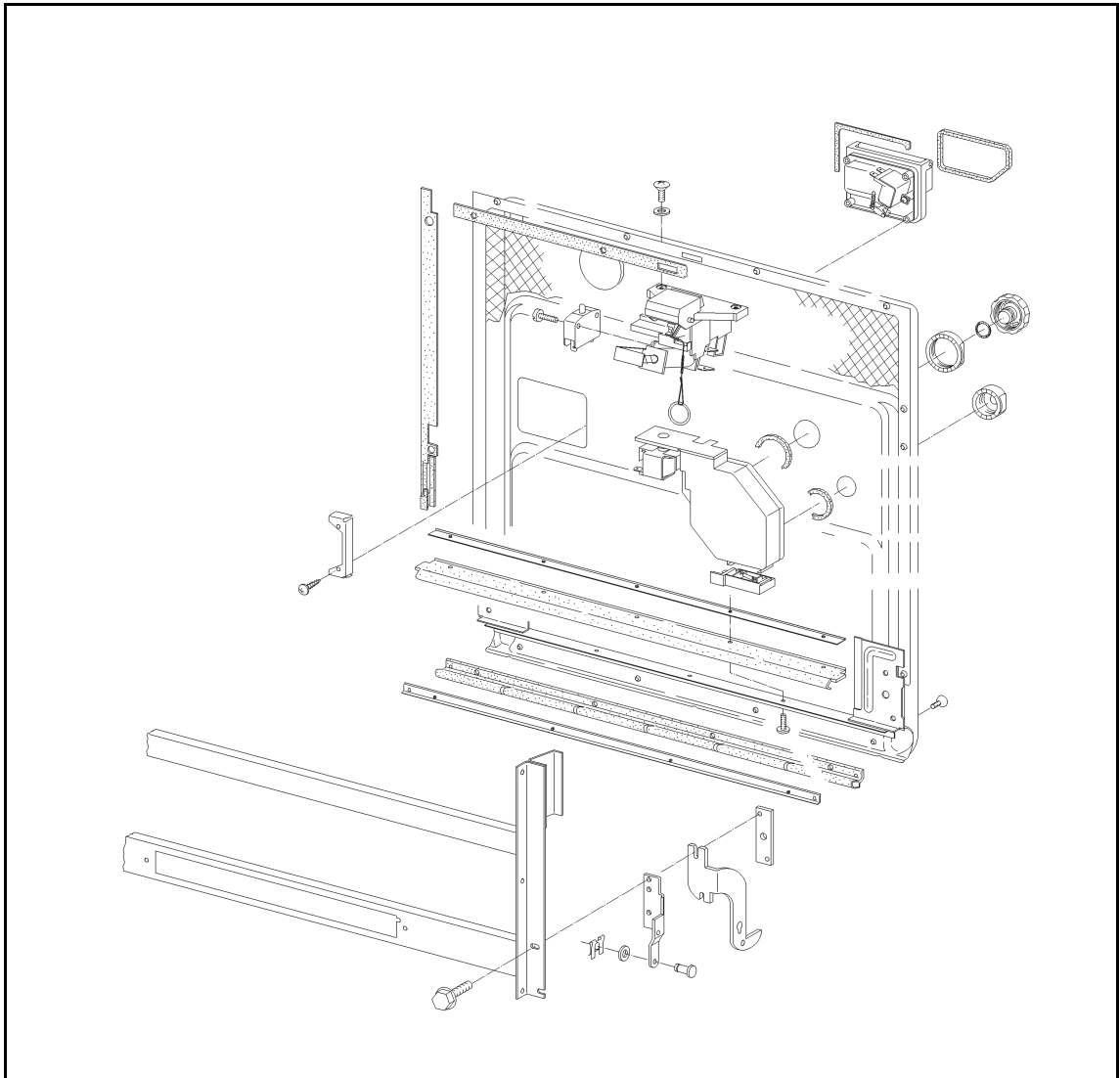
## 4.7 Connecting Strip

**Warning!**

To avoid instability, the connecting strip (010 Fig. 8, Pos. B) behind the toekick **must never be loosened or removed.**

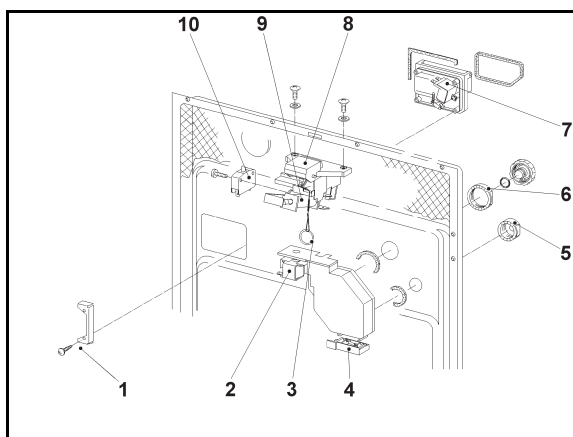


## 021 Door



## 2 Function

### 2.1 Door Components

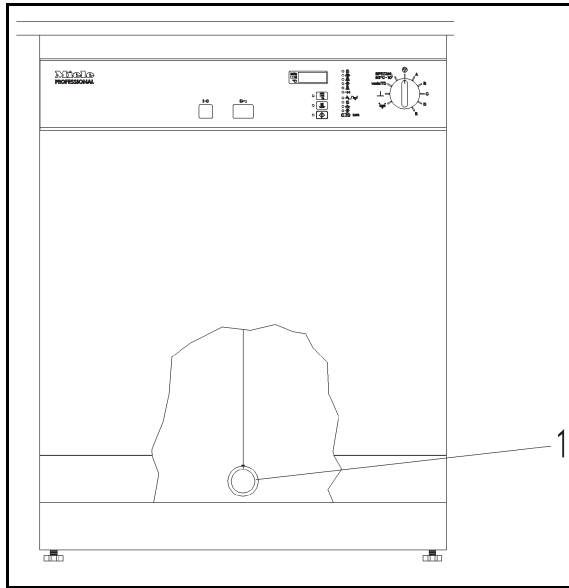


**Fig. 1**

- |    |  |
|----|--|
| 1  | Powder dispenser retaining bracket               |
| 2  | Liquid dispenser solenoid, Y50 (208/220 V 60Hz)  |
| 3  | Emergency door release cord                      |
| 4  | Dispenser unit reed switch, B8/1                 |
| 5  | Screw fastening for liquid dispenser (rinse aid) |
| 6  | Threaded ring                                    |
| 7  | Powder dispenser solenoid, Y51 (208/220 V 60Hz)  |
| 8  | Lock   |
| 9  | Release magnet solenoid, Y53                     |
| 10 | Door switch, 1S4                                 |

### 2.2 Emergency Door Release

To ensure that the door can be opened in case of a power failure, an emergency mechanical release mechanism (021 Fig. 1, Pos. 3) is provided. The door is opened by pulling the ring behind the service panel. **The mechanical door release should only be used in an emergency.**

**Fig. 2: Mechanical Door Release**

## **4 Service**

### **4.1 Removing Rinse Aid Dispenser Assembly (DOS 2) With Valve Y50**

- ✂ Removing the Outer Door Panel, 022 4.1.
- ✂ Remove the threaded ring (021 Fig. 1, Pos. 6) from the injector cap.
- ✂ Remove the screw fastening (021 Fig. 1, Pos. 5) from the rinse aid dispenser window.
- ✂ Remove the dispenser assembly.

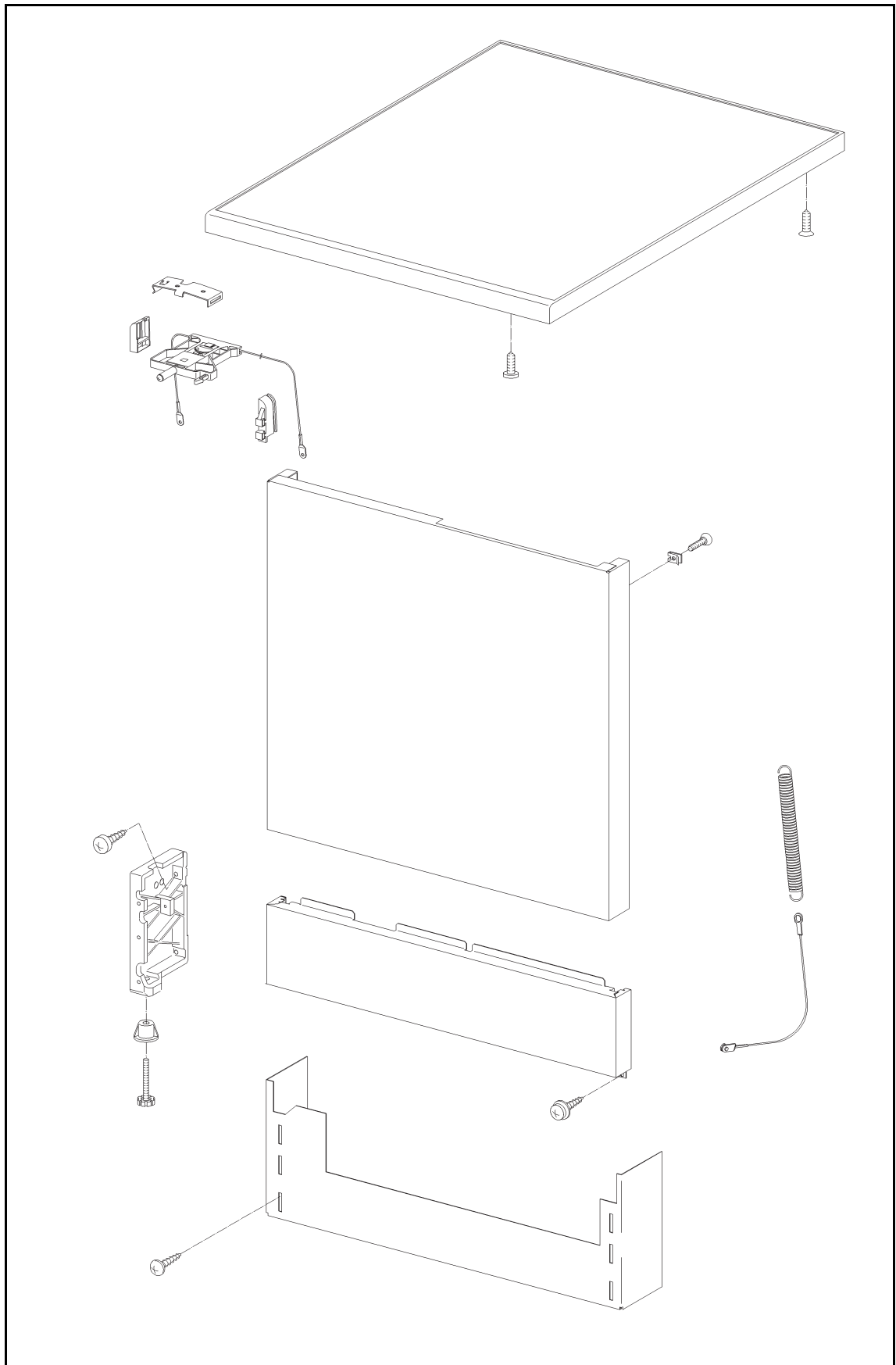
### **4.2 Replacing the Reed Switch in Rinse Aid Float Switch B8/1**

- ✂ Removing the Outer Door Panel, 022 4.1.
- ✂ Pull the reed switch (021 Fig. 1, Pos. 4) forwards out of its holder on the dispenser.
- ✂ Disconnect the plug contacts and connect them to the new reed switch.
- ✂ Reassemble by following these instructions in reverse order.

### **4.3 Removing Powder Dispenser With Solenoid Y51**

- ✂ Removing the Outer Door Panel, 022 4.1.
- ✂ Remove the 4 screws securing the powder dispenser (021 Fig. 1, Pos. 1).
- ✂ Remove the powder dispenser.

## 022 Front Paneling



# 1 Technical Data

Door Spring Mat. No.	Color	Tensile Force (lbs)	Tensile Force (N)	Length (inches)	Length (mm)
04083990	Red	60.6	270	7.9	200
04274900	Orange	43.7	195	7.9	200
04348560	Blue	57.2	255	9.8	250
04083960	White	85.3	380	7.9	200
04944700	Yellow	76.3	340	7.9	200
04317280	None [1]	85.3	380	9.8	250
04839430	Green	94.3	420	9.8	250
05390030 <sup>1)</sup>	None [2]	107.8	480	10.4	265

**Table 1:** Door Spring Color Codes and Technical Data

<sup>1)</sup> For doors with particularly heavy decor panels.

## **2 Function**

### **2.1 Machine Installation and Leveling**

These machines must be installed perfectly level. The height-adjustable machine feet (022 Fig. 1, Pos. 1) are accessible after the toekick is removed. See Service Panel Removal, 022 4.2. For more information regarding correct installation and leveling, see the appropriate operating/installation instructions.

### **2.2 Door Springs and Support Mechanism**

The door is supported by two springs and cables. In some models, the springs may have different tensile strengths. The tensile strength is indicated by a color code; see 022 Table 1.

## 4 Service

### 4.1 Removing the Outer Door Panel

**Warning!**

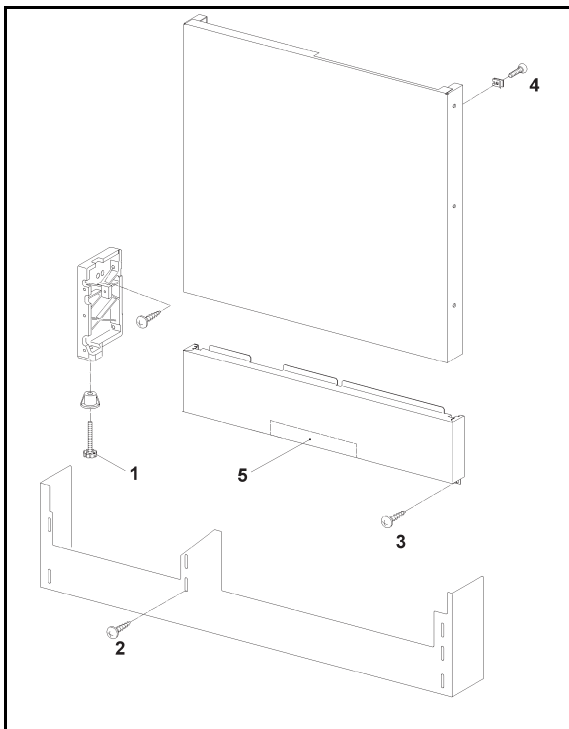
Hold and support the outer door panel when removing it. This will keep the panel from falling or twisting.

- ✂ Open the door and remove the countersunk screws (022 Fig. 1, Pos. 4) around the inner edge.
- ✂ Close the door and remove the outer door panel.

### 4.2 Service Panel Removal

**Warning!**

Disconnect the machine from the main electrical supply.



**Fig. 1: Service Panel**

- ✂ Remove the two screws securing the service panel (022 Fig. 1, Pos. 3).
- ✂ Hold the service panel at both sides and pull upwards.
- ✂ Unscrew the facing and remove the plastic protective cap (022 Fig. 1, Pos. 2).



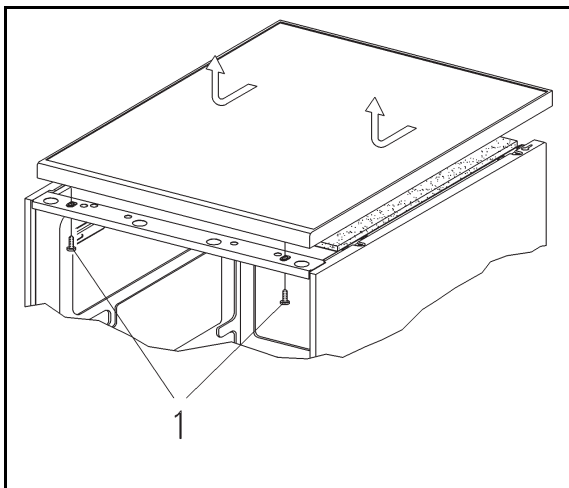
**Note**

The illustration incorrectly shows a screw in the center.

**Note**

When re-installing, ensure that the door emergency release cord (021 Fig. 1, Pos. 3), is guided through the small rectangular opening in the top of the service panel. The ring on the cord must be accessible by hand from below through the cutout in the service panel (022 Fig. 1, Pos. 5).

### 4.3 Removing the Lid



**Fig. 2:** Machine Lid (Non-CD Models)

- ✚ Open the door.
- ✚ Remove the two Phillips screws (022 Fig. 2, Pos. 1).

**Note**

In CD models, there are no other screws securing the lid.

- ✚ Slide the lid slightly forward and lift it off.

#### 4.4 Spring Replacement (Right/Left)

- ✚ Remove the right or left side panel (Side Panel Removal, 010 4.1).
- ✚ Close the door.
- ✚ Release the spring tension; see Spring Adjustment, 022 4.7.
- ✚ Unhook the spring.

**Danger!**

Exercise caution when opening the door. Because the door is no longer held in place by spring tension, it can fall forward.

- ✚ Re-install by following these instructions in reverse order.
- ✚ The tension provided by the new spring must be adjusted after installation. See Spring Adjustment, 022 4.7.

#### 4.5 Removing the Left Spring

**G 7882 CD, G 7883 CD**

- ✚ Remove the drying unit drip tray.
- ✚ Release the spring tension; see Spring Adjustment, 022 4.7.
- ✚ Pull the spring down. Release the cable from the pulley.
- ✚ Unhook the spring.

**Danger!**

Exercise caution when opening the door. Because the door is no longer held in place by spring tension, it can fall forward.

- ✚ Re-install by following these instructions in reverse order.
- ✚ The tension provided by the new spring must be adjusted after installation. See Spring Adjustment, 022 4.7.

## 4.6 Spring Mechanism Removal

- ✚ Removing the Lid, 022 4.3.
- ✚ Remove the right and left side panels; see Side Panel Removal, 010 4.1.
- ✚ Remove the right and left springs; see Spring Replacement (Right/Left), 022 4.4.
- ✚ Unclip the clamp above the spring mechanism.
- ✚ Remove the spring mechanism.

## 4.7 Spring Adjustment

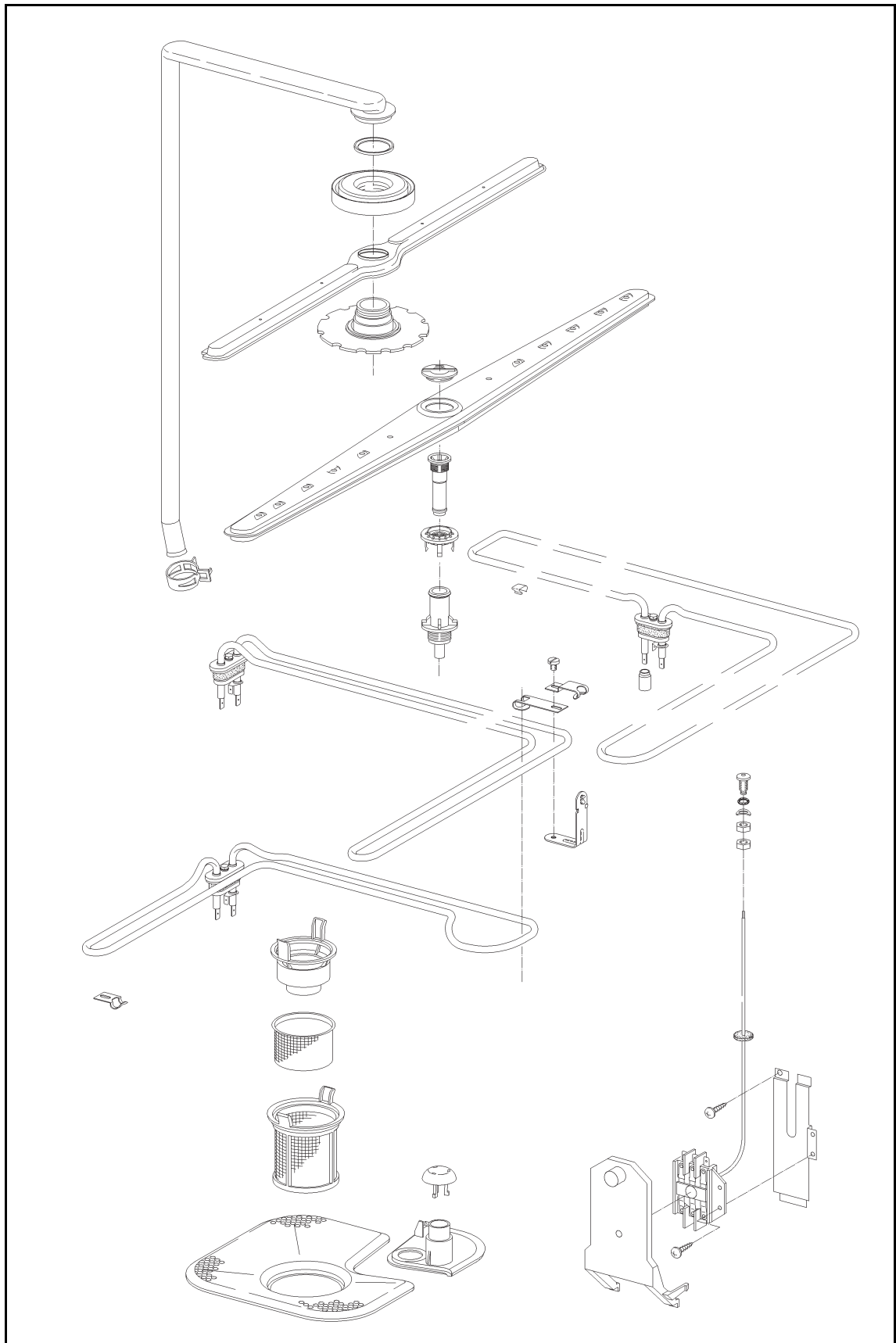
- ✚ Open the door.

### Note

The spring adjustment screw is located in the top front edge of the machine cabinet, to the left.

- ✚ Use a Phillips-head screwdriver to adjust the screw.
- ✚ Clockwise = tighten.
- ✚ Counterclockwise = loosen.
- ✚ Adjust the door when it is open at an angle of 45° so that it will remain stationary in this and any other position.

## 030 Spray System, Heater



# 1 Technical Data

Heater Elements			
	Power Rating	Voltage	Use
R1	2.2kW	230V	Water and drying
R2 and R3	2.2kW each	230V	Water only

**Table 1:** Heater Element Data (as per Parts CD)

## 2 Function

### 2.1 Spray System

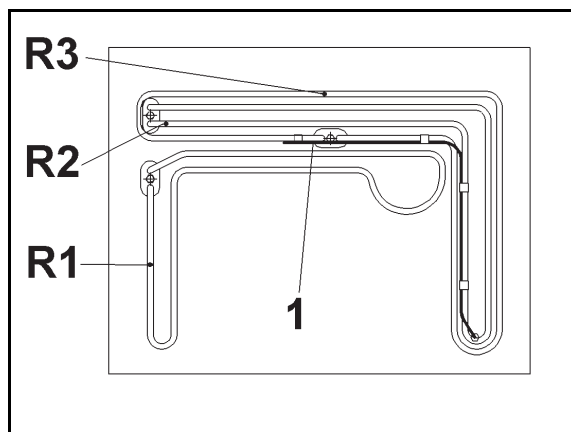
Freshwater circulation system with one rotating spray arm and direct injection for the upper basket.

### 2.2 Heater Elements

The three heater elements, R1, R2, and R3, are used for heating the wash cabinet and for drying. They are connected in a star formation as standard. They can be rewired for other voltages; see 080 2.4 Power Supply Connection Conversion Possibilities. The G 7882 CD and G 7883 CD cannot be rewired.

#### **Danger!**

The connections from the heater elements to the two heater relays (1K1/1 and 2K1/1) must not be swapped.



**Fig. 1:** Heater Element Positions

- |         |                                       |
|---------|---------------------------------------|
| 1       | Temperature limiter F2 capillary tube |
| R1      | Heater element for water and drying   |
| R2 + R3 | Heater elements for water             |

## 2.3 Temperature Limiter F2 (Thermostat) 329° F (165° C)

Temperature limiter F2 is connected electrically in series between the heating connection and the two heater relays, 1K1/1 and 2K1/1. Its capillary tube is located in the cabinet on heater elements R2 and R3. The temperature limiter cuts out when the heater element's external temperature rises above 329° F (165° C). After the temperature has dropped, the limiter does **not** reset automatically. It must be manually reset. See Resetting Temperature Limiter F2 (Thermostat), 030 4.2.

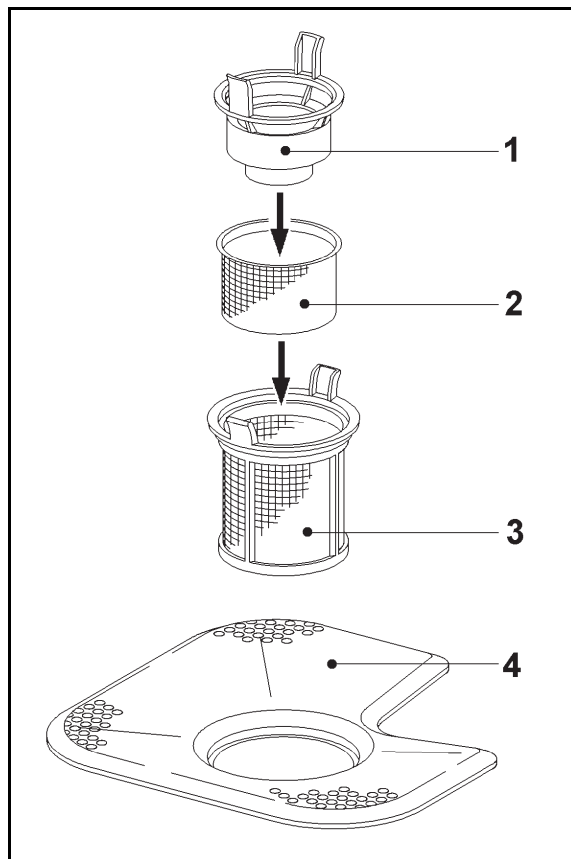
### **Warning!**

Before the temperature limiter is reset, it is essential to allow the heater elements to cool and to establish why the limiter tripped.

During a heating step, the electronic checks whether the set wash temperature is reached. If the desired temperature is not achieved within 60 minutes, e.g., due to a heater element open circuit, then a fault code indicating "Temperature not reached" will be displayed. Depending on the wash block in question, this fault code can be F01, F02, F03, F18, F19, or F27

## 2.4 Filter System

A four-filter combination consisting of a coarse filter, fine filter, microfine filter, and large surface area fine filter.

**Fig. 2: Filter Combination**

- |   |  |
|---|--|
| 1 | Coarse filter  |
| 2 | Fine filter  |
| 3 | Microfine filter, mesh size 0.01" (0.25mm)                       |
| 4 | Large surface area fine filter, perforation diameter 0.04" (1mm) |

The circulating wash water is filtered via 2 parallel paths. A portion of the water flows through the central opening of the coarse filter and then passes through the microfine filter. The remainder passes directly through the large surface area fine filter (030 Fig. 2, Pos. 4). All water is then mixed together again in the sump, where it is taken in by the circulation pump, and the process repeats. In this way some of the water passing through the filter system always passes through the microfine filter so the soil particles in the suds are continually being reduced. Soil that is retained by the microfine filter either collects there or falls onto the filter cap where it will eventually be removed by the drain pump. During the drainage a large portion of the suds passes through the microfine filter in reverse direction of flow (outside to inside) and thus cleans the filter.



## **3 Fault Repair**

### **3.1 Temperature Limiter F2 (Thermostat) Has Cut Out**

#### **Cause**

The heater relay contacts (1K1/1 or 2K1/1) have fused together.

#### **Remedy**

- ✎ Check the heater relay contacts for continuity when they are not activated.
- ✎ If continuity exists, replace the appropriate relay. See Heater Relay Removal, 080 4.2.

#### **Cause**

Excessive foam developed in suds.

#### **Remedy**

- ✎ Check the quantity of rinse aid dispensed.
- ✎ Use a different rinse aid.

### **3.2 Repetitive Heater Element Fault in Cabinet**

#### **Symptom**

Short circuit and/or body contact at heater elements in cabinet.

#### **Cause**

Over long periods of time, excessively foaming suds may cause the heater elements to fail. May be caused by non-Miele-approved detergent. A check can be made during washing by using the clear door.

#### **Remedy**

- ✎ Replace the heater element. See Heater Element Replacement, 030 4.5.
- ✎ Use only detergents recommended by Miele.

## 4 Service

### 4.1 Checking the Heater Element

- ✄ Service Panel Removal, 022 4.2.
- ✄ Toekick Removal, 010 4.6.
- ✄ Check the heater elements for continuity at temperature limiter F2. Measure from contacts 32, 22 or 12 for one heater element in each case to neutral (star point, 080 Fig. 5, Pos. 1).

#### Note

This only applies to star-formation connections with 3N AC. It does not apply if the heater elements are connected in delta formation.

### 4.2 Resetting Temperature Limiter F2 (Thermostat)

#### Danger!

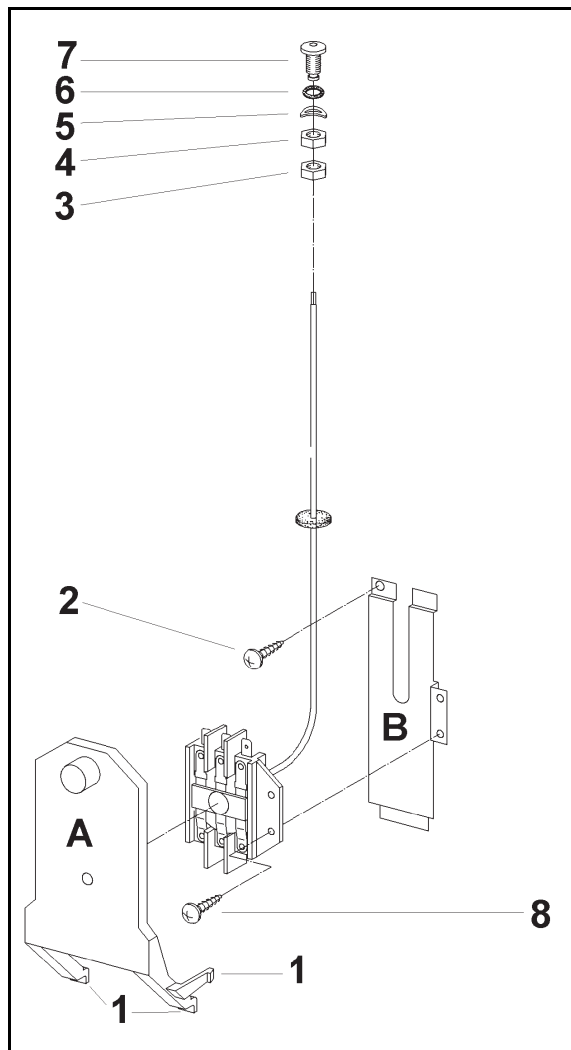
Whenever the toekick is to be removed it is **essential** to disconnect the machine from the power supply. If the temperature limiter reset button should fall off, the contacts thus exposed will have supply voltage applied to them!

- ✄ Remove the service panel.
- ✄ Firmly press in the red-brown button on the right side.

### 4.3 Replacing Temperature Limiter F2 (Thermostat)

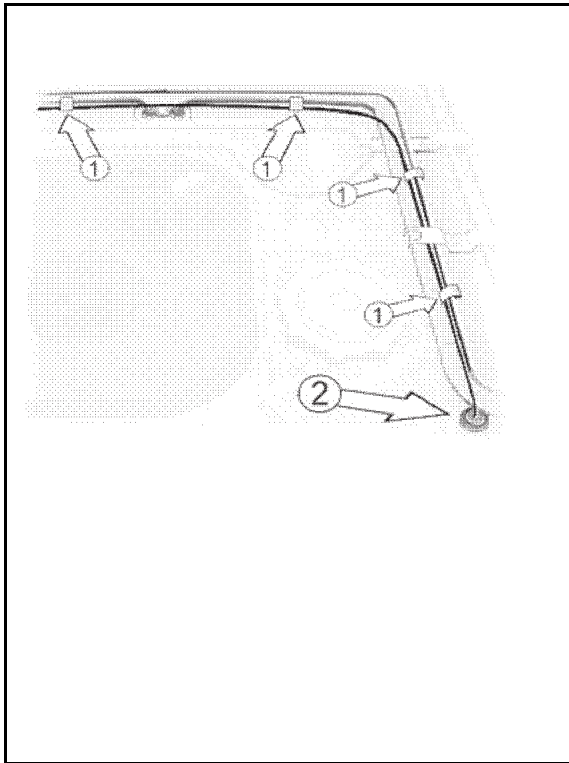
#### Warning!

To avoid instability, the connecting strip (010 Fig. 8, Pos. B) behind the toekick **must never be loosened or removed**.



**Fig. 3:** Safety Thermostat AFK3 G-A (Stiebel Co.), F2

- ✂ Service Panel Removal, 022 4.2.
- ✂ Toekick Removal, 010 4.6.
- ✂ Disconnect the connection plugs.
- ✂ Remove the retaining screws (030 Fig. 3, Pos. 2, Pos. 8).
- ✂ Open the door and release the clips holding the capillary tube onto the heater elements (030 Fig. 4, Pos. 1).
- ✂ Carefully pull the capillary tube downwards out of the cabinet feed-through hole (030 Fig. 4, Pos. 2).
- ✂ Insert the new capillary tube. Apply a little grease or sealant around the cabinet feed-through hole.



**Fig. 4:** Temperature Limiter Routing

**Note**

When reinstalling the temperature limiter, ensure that the capillary tube connects between heater elements R2 and R3. It should not be connected to heater R1, as R1 is used for drying.

#### 4.4 Replacing the Capillary Tube Feed-Through Hole

- ✂ Remove the capillary tube; see Replacing Temperature Limiter F2 (Thermostat), 030 4.3.
- ✂ Hold the locknut under the cabinet with a suitable wrench and loosen the feed-through inside the cabinet.
- ✂ For reassembly, see 030 Fig. 3, Pos. 3-7.

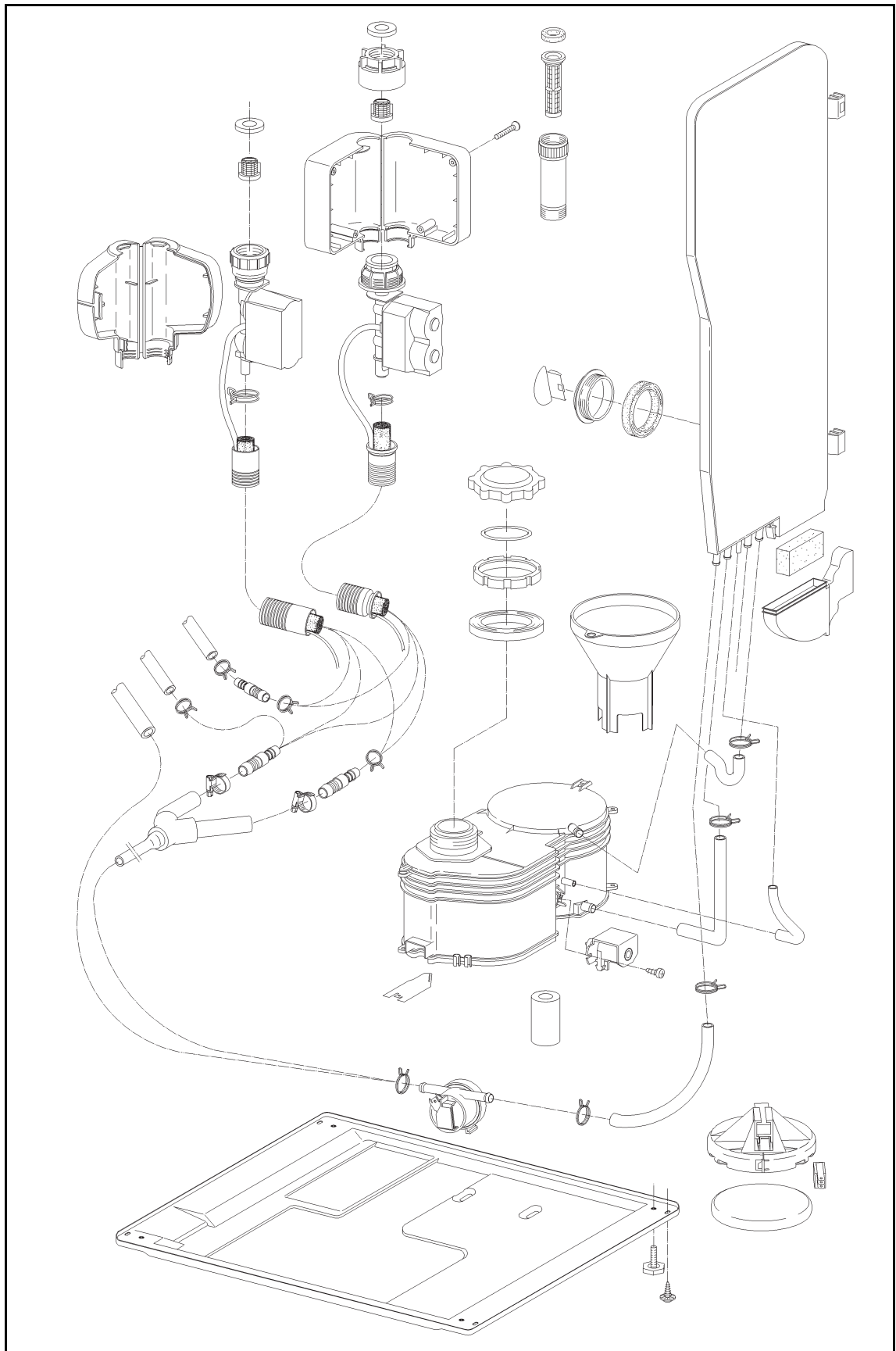
**Note**

During removal and reassembly, make sure not to bend or warp the cabinet base around the feed-through.

## **4.5 Heater Element Replacement**

- ✂ Open the door and loosen the appropriate heater element holder.
- ✂ Remove the appropriate heater element central screw in the cabinet.
- ✂ Lift the heater element, complete with rubber seal, upwards to remove.
- ✂ When re-installing, ensure that the heater element seal completely seals the heater element hole in the cabinet.

## 041 Hot/Cold Water Intake, Water Softener



# 1 Technical Data

Solenoid Data					
Valve	Voltage	Flow Pressure	Flow Rate	Connection Hose Length <sup>1)</sup>	Threaded Union
Cold water (Y1)	1N AC 220/240 V 60Hz	29 - 145 psi (2 - 10 bar)	2.1 gal/min (7.5 L/min)	5.6' (1.7m)	3/4"
Hot water (Y12)	1N AC 220/240 V 60Hz	29 - 145 psi (2 - 10 bar)	2.1 gal/min (7.5 L/min)	5.6' (1.7m)	3/4"

**Table 1:** WaterProof System Data (as per Parts CD)

<sup>1)</sup> The standard WaterProof System hose can be replaced with a 14.8-foot (4.5-meter) version.

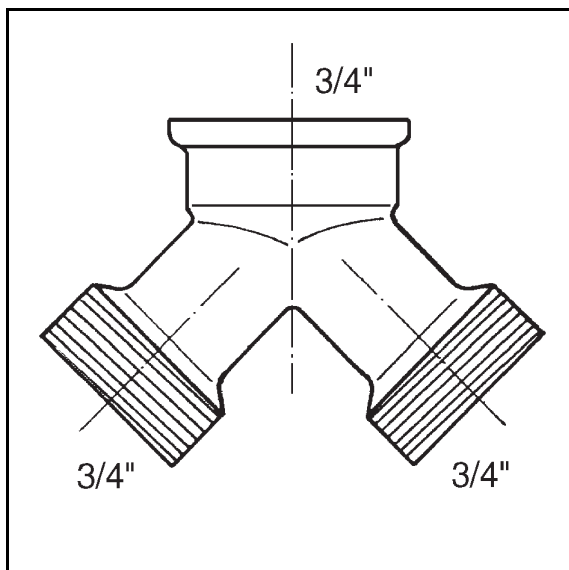
Water Softener	
Weight Without Water	Capacity with 6° d (degree of German hardness) water hardness
Approx. 13 lbs (6 kg)	Approx. 150 gal (570 L)

**Table 2:** Water Softener Data

## 2 Function

### 2.1 Water Connection

- Connection to the water supply may be made directly without the need for additional safety measures (e.g., a non-return valve), as these machines are built to comply with German DVGW (water authority) guidelines.
- If hot water is not available, both hoses must be connected to the cold-water supply via a Y-piece.



**Fig. 1:**  $\frac{3}{4}$ " Y-Piece

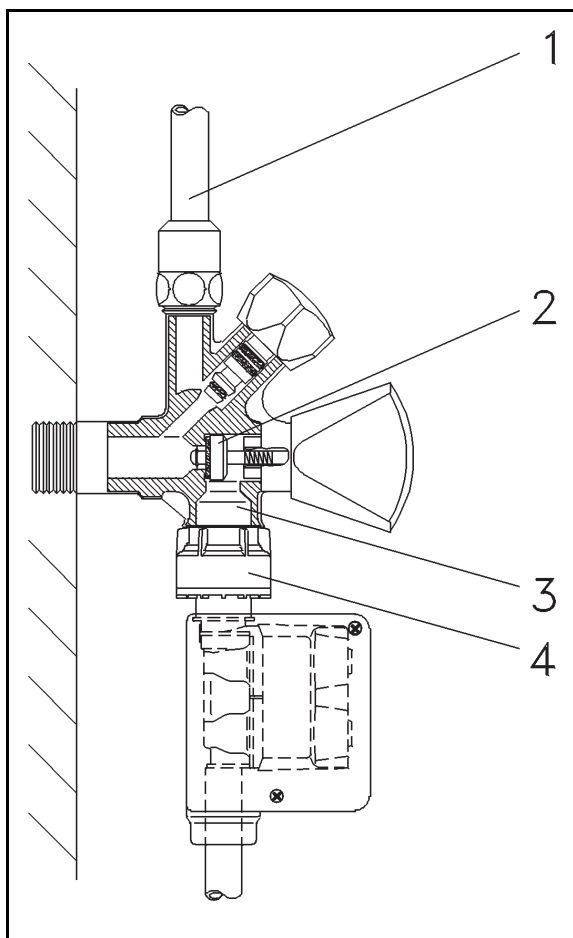
- The required flow pressure must be at least 10 pounds per square inch, or 0.7 bar. If pressure is below 10 pounds per square inch, then the water intake time is automatically extended by a maximum of 5 minutes. The machine cannot be operated if water pressure is below 7.3 pounds per square inch (0.5 bar).
- With a static water pressure above 145 pounds per square inch (10 bar), a pressure-reducing valve must be installed.
- The intake filter must be installed between the on-site supply and the intake hose.

#### **Warning!**

In models with a steam condenser, the cold-water intake hose must not be connected to hot water.



## 2.2 Connection to a Shutoff Valve with Spring-Loaded Valve



**Fig. 2: Shutoff Valve with WaterProof Valve**

### – Correct function

If the on-site shutoff valve contains a spring-loaded valve (041 Fig. 2, Pos. 2), then, even if the valve is opened, the spring can hold the valve plate closed if the counter pressure at the valve exit (041 Fig. 2, Pos. 4) is the same as that of the supply. When both valves in the WaterProof system open, the supply pressure can open the valve plate (041 Fig. 2, Pos. 2) against the spring pressure and supply water can flow into the machine.

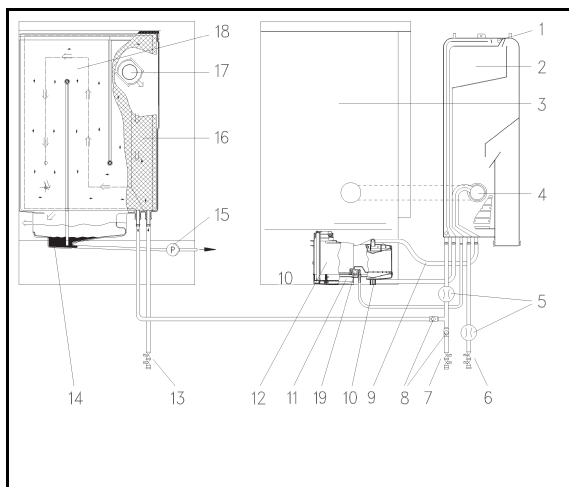
### – Faulty function

If, e.g., a mixer tap located above the shutoff valve, 041 Fig. 2, Pos. 1, is closed very quickly, a short high-pressure pulse (pressure hammer) develops in the water supply and is exerted in all directions. This pressure also develops in the chamber (041 Fig. 2, Pos. 3) if the shutoff valve is open and here the spring closes the pressure plate before the pressure can disperse. Now the valves in the double solenoid valve cannot open against this high pressure and water cannot flow into the machine.

### Note

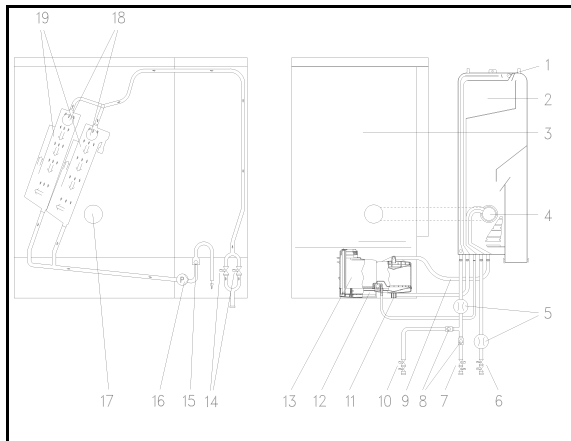
Miele washer-disinfectors are approved by the German water authority (shown by the DVGW certification). Shutoff valves with spring-loaded valve plates are therefore not required and can, if necessary, be replaced with non-spring-loaded versions.

## 2.3 Water Paths



**Fig. 3:** Water Paths – 24-Inch Machine with the Maximum Number of Options

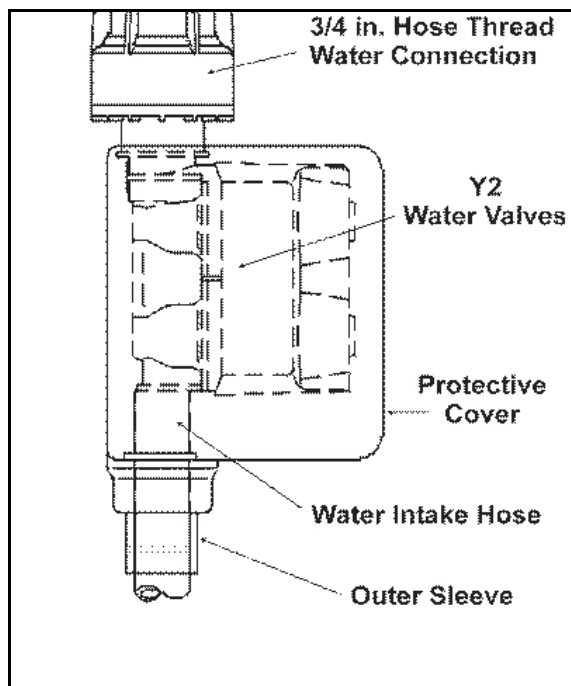
- |    |   |
|----|---|
| 1  | Non-return device                       |
| 2  | Softener reactivation reservoir         |
| 3  | Cabinet                                 |
| 4  | Water intake - Soft water from softener |
| 5  | Flow meter                              |
| 6  | Water inlet valve - Demineralized water |
| 7  | Water inlet valve - Hot or cold water   |
| 8  | Non-return valve                        |
| 9  | Water softener - Soft water outlet      |
| 10 | Water softener - Supply water intake    |
| 11 | Salt container intake                   |
| 12 | Salt container                          |
| 13 | Water inlet valve - Cold water          |
| 14 | Condensate collector                    |
| 15 | Condensate drain pump                   |
| 16 | Heat exchanger plate                    |
| 17 | Steam intake                            |
| 18 | Steam condenser                         |
| 19 | Reactivation valve                      |



**Fig. 4:** Water Paths – 28-Inch Machine with the Maximum Number of Options

- |    |  |
|----|--|
| 1  | Non-return device                                  |
| 2  | Softener reactivation reservoir                    |
| 3  | Cabinet  |
| 4  | Water intake - Soft water from softener            |
| 5  | Flow meter   |
| 6  | Water inlet valve - Demineralized water            |
| 7  | Water inlet valve - Hot water                      |
| 8  | Non-return valve                                   |
| 9  | Water softener - Soft water output                 |
| 10 | Water inlet valve - Cold water                     |
| 11 | Water softener - Supply water intake               |
| 12 | Salt container intake                              |
| 13 | Salt container                                     |
| 14 | Water inlet valve - Cold water for steam condenser |
| 15 | Non-return valve                                   |
| 16 | Condensate drain pump                              |
| 17 | Air intake - Drying unit (TA)                      |
| 18 | Steam intake                                       |
| 19 | Steam condenser                                    |

## 2.4 WaterProof System



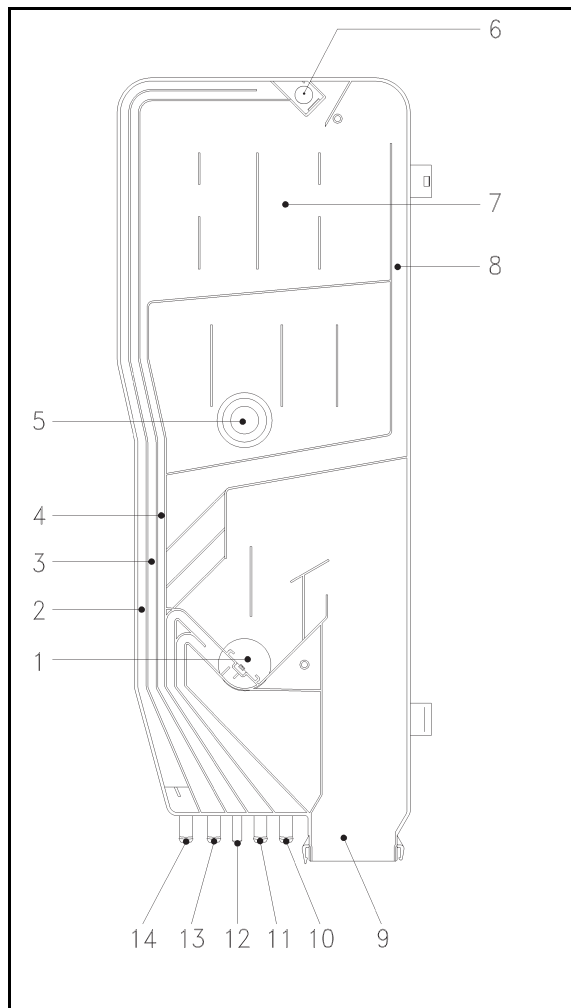
**Fig. 5:** WaterProof System

Two independently functioning solenoid valves in the intake hose are combined to form the WPS valve, e.g., Y1 (cold water), Y12 (hot water) and/or Y20 (demineralized water). The two valves located directly at the shutoff valve connection are connected in series, both electrically and for water flow. This ensures that if one valve should fail (e.g., due to blockage caused by a foreign object) the water flow can still be switched off by the other valve if necessary. Float switch B8/3, located in the drip pan under the machine, also forms part of the system; see 050 2.6.1 Float Switch B8/3.

### **Warning!**

The WaterProof system only operates with the door closed and the machine switched on.

## 2.5 Water Intake, Water Diverter



**Fig. 6: Water Diverter**

In accordance with DVGW guidelines, the water diverter is provided with a non-return device which prevents the possibility of a reflux of water back into the supply should a vacuum exist.

The water intake hose from the WaterProof System (WPS) (cold/hot water) is connected to the water diverter (041 Fig. 6, Pos. 14). Hard supply water flows past the non-return valve (041 Fig. 3, Pos. 8) via flow meter 1B3/4 (041 Fig. 3, Pos. 5) through the intake channel (041 Fig. 6, Pos. 2) past the ball valve (041 Fig. 6, Pos. 6) into the water diverter. Here a small proportion of the water passes through small bypasses in the ball valve to the water reservoir (041 Fig. 6, Pos. 7) for later use for softener reactivation. When this reservoir is full, excess water flows past the overflow (041 Fig. 6, Pos. 8) directly into the cabinet. The proportion of supply water to soft water is approximately 3 to 8 percent.

### Note

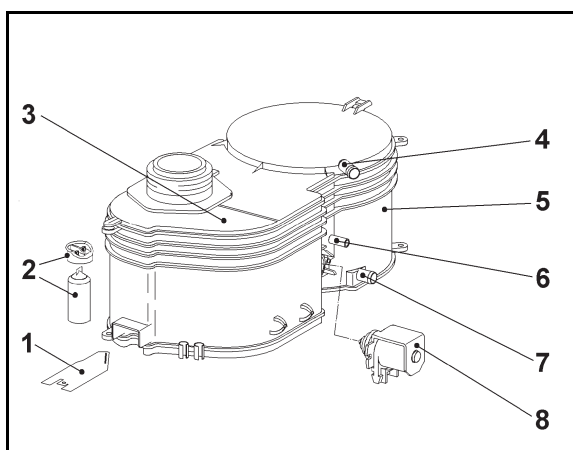
After softener reactivation, the reservoir is filled again by the time the third water intake has taken place.

The majority of the water, blocked by the ball valve at the water reservoir inlet, flows via the water channel (041 Fig. 6, Pos. 3) downwards to the water diverter outlet (041 Fig. 6, Pos. 13) and then to the water softener (041 Fig. 3, Pos. 10). After passing through the water softener, the now-soft water flows via the soft water intake (041 Fig. 6, Pos. 10) back into the water diverter. It then flows into the cabinet via the water intake (041 Fig. 3, Pos. 4) into the cabinet. Cabinet ventilation is ensured via the opening (041 Fig. 6, Pos. 9).

If the washer-disinfector is connected to a demineralized water supply, this does not pass through the softener; instead, it flows via the water diverter intake (041 Fig. 6, Pos. 11) directly into the cabinet. A dedicated flow meter (2B3/4) monitors the quantity taken in.

## 2.6 Water Softener, Reactivation

### 2.6.1 Softener Block



**Fig. 7: Water Softener with Additional Electrical Components**

- |   |  |
|---|--|
| 1 | Salt container reed switch B8/2                                    |
| 2 | Float with cap (in salt container) - Activates reed switch B8/2    |
| 3 | Salt container   |
| 4 | Soft water exit  |
| 5 | Ion exchanger  |
| 6 | Intake for water for reactivation from reservoir in water diverter |
| 7 | Supply water intake  |
| 8 | Reactivation solenoid Y38 (230VAC)                                 |

### 2.6.2 Softener Reactivation, Reactivation Cycles

Reactivation of the ion exchanger depends on the set supply water hardness level (programmable function E 01, 070 2.8.1 **E 01**, Program-Independent Functions) and the quantity of water taken in registered by the flow meter (consumption-linked reactivation). The total quantity of hot and cold water taken in over a period of time is registered by flow meter 1B3/4, recorded by the electronic and

compared with a reactivation table (041 Table 3) stored in memory. The quantity of demineralized water taken in, registered by flow meter 2B3/4, is not taken into account because this water does not pass through the water softener.

For reactivation the electronic activates solenoid valve Y38 (041 Fig. 7, Pos. 8). Supply water from the reservoir (041 Fig. 7, Pos. 6) in the water diverter then flows into the salt container where it dissolves a quantity of salt. The brine then flows past a mechanical non-return valve into the ion exchanger and flushes the water already present there into the sump. The built-in non-return valve in the softener prevents the brine from mixing with the incoming supply water during normal wash cycles. The brine flushes the resin in the ion exchanger and replaces the retained calcium and magnesium ions (the hardness constituents previously removed from the hard water) with sodium ions.

The salt in the salt container is sufficient for several reactivation cycles as it is not all dissolved at once. The saturation point, above which the water cannot dissolve any more salt, is approximately 40 percent. As the quantity of salt in the salt container diminishes, the concentration of the brine decreases, and when a certain minimum concentration is reached, the float with magnet activates the reed switch (041 Fig. 7, Pos. 1). The **Salt** (S) LED then lights up.

Water Hardness Setting, °d (Degree of German Hardness)	Total Water Quantity After Which Reactivation Will Occur (Gallons (Liters))
0	No limitation (only without softener)
1 - 4	185 (700)
5	165 (625)
6	151 (570)
7	137 (520)
8	125 (475)
9	116 (440)
10	108 (408)
11	101 (382)
12	94 (356)
13	88 (332)
14	82 (309)
15	76 (287)
16	70 (266)
17	65 (246)
18	60 (227)
19	55 (210)
20	51 (194)
21	48 (182)
22	45 (171)
23	42 (160)
24	40 (150)

Water Hardness Setting, °d (Degree of German Hardness)	Total Water Quantity After Which Reactivation Will Occur (Gallons (Liters))
25	37 (140)
26	35 (131)
27	32 (122)
28	30 (113)
29	28 (105)
30	25 (96)
31	24 (91)
32	23 (86)
33	22 (82)
34	21 (78)
35	20 (74)
36	18 (70)
37	17 (66)
38	16 (62)
39	16 (59)
40	15 (56)
41	14 (53)
42	13 (51)
43	13 (50)
44	13 (49)
45 - 60	13 (48)

**Table 3:** Reactivation Showing Relationship Between Water Hardness and Water Quantity

In normal operation, reactivation (if required) is performed after the end of the water intake step of the last main wash block HR 1 or HR 2. In chemical disinfection programs (CH-DESIN), it takes place before the first wash block, during heating, at the same time as the exposure time. Flushing the remaining brine from the softener is carried out after the machine has completely drained at the end of one of the named wash blocks.

If, due to a high set water hardness level or a high water consumption, the reactivation cycle operating in parallel to the wash steps in the area of HR 1, HR 2, or CH-DESIN (G 7882 only) is not sufficient, an additional reactivation will be performed at the start of the next program. The draining time at program start is then extended to 150 seconds. If a steam condenser is installed, the condensate drain pump is switched off after 1 minute. During the contact time (2.5 minutes), no other component is active.



Reactivation takes place in 7 steps:

- 2.5 minutes of brine flowing into ion exchanger.
- 2.5 minutes of contact time for brine in ion exchanger.
- Flushing with 0.4 gallons (1.4 liters) of cold water followed by 10 seconds of drainage.
- Flushing with 0.4 gallons (1.4 liters) of cold water followed by 10 seconds of drainage.
- Flushing with 0.4 gallons (1.4 liters) of cold water followed by 10 seconds of drainage.
- Flushing with 0.4 gallons (1.4 liters) of cold water followed by 30 seconds of drainage.
- Flushing with 0.4 gallons (1.4 liters) of cold water followed by 50 seconds of drainage.

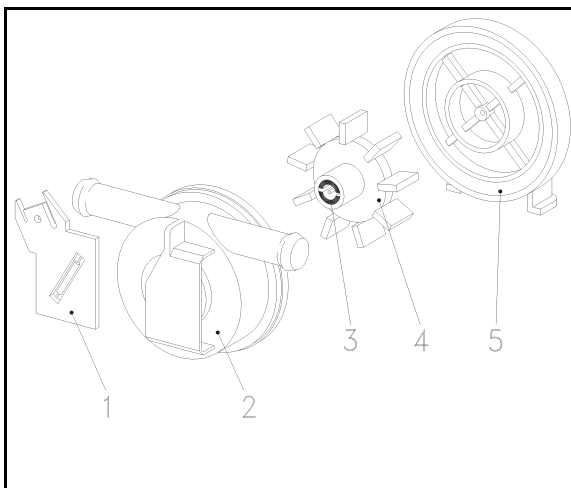
### 2.6.3 Water Hardness Conversion Chart

Grains Per Gallon (gpg)	Parts Per Million (ppm)
6	107
7	125
8	143
9	160
10	179
11	196
12	214
13	232
15	268
17	304
19	339
22	393
24	428
28	500
32	571
38	678
48	857
71	1267

**Table 4:** Water Hardness Conversion Chart

## 2.7 Flow Meter

The incoming water rotates an impeller in the flow meter. A permanent magnet located in the flow meter axle activates an external reed switch each time the axle rotates. The pulses supplied by the reed switch are registered by the electronic. Approximately 200 pulses represent 0.3 gallons (1 liter) of water. An adjustment of the number of pulses per **liter** is not possible. If the flow count is not satisfied after 5 minutes, then the machine will fault out. There is also an overflow level control.



**Fig. 8:** Flow Meter Components

- |   |                                      |
|---|--------------------------------------|
| 1 | Circuit board (PCB) with reed switch |
| 2 | Housing                              |
| 3 | Permanent magnet                     |
| 4 | Impeller                             |
| 5 | Housing cap                          |

## **3 Fault Repair**

### **3.1 No Water Intake**

#### **Symptom**

Water intake only starts after rotation of the circulation pump has been registered; see 050 2.4 Circulation Pump M6.

#### **Cause**

Circulation pump is not running.

#### **Remedy**

- ↯ Check the circulation pump for power or mechanical failure.
- ↯ Speed Sensor B3/9 Check, 050 4.1.

#### **Cause**

WaterProof System (WPS) valve does not open.

#### **Remedy**

- ↯ See fault code **F 0E** in 070 2.11.2 Intake/Drain Fault LED and/or 070 Table 51.

### **3.2 Minimum/Maximum Number of Flow Meter Pulses Not Achieved**

#### **Cause**

Flow meter clogged by limescale.

#### **Remedy**

- ↯ Flow Meter (Cold Supply Water) Replacement, 041 4.3.

#### **Note**

The flow meter is behind temperature limiter F2.

#### **Cause**

Reed switch defective.

**Remedy**

- ✂ Check the reed switch for correct operation and seating.
- ✂ Check the reed switch connections and plugs.
- ✂ If necessary, replace the reed switch; see Reed Switch (Supply Water Flow Meter) Replacement, 041 4.2.

## 4 Service

### 4.1 Reed Switch B8/2 (Salt Container Float Switch) Replacement

- ✂ Service Panel Removal, 022 4.2.
- ✂ Disconnect the plug connection from the reed switch.
- ✂ Use needlenose pliers to remove the circuit board (PCB) with reed switch from the salt container.
- ✂ Slide the PCB with the new reed switch into the holder until it clips into position.
- ✂ Reconnect the plug connection.

### 4.2 Reed Switch (Supply Water Flow Meter) Replacement

- ✂ Service Panel Removal, 022 4.2.

**Note**

The flow meter is behind temperature limiter F2.

- ✂ Disconnect the plug connection from the reed switch.
- ✂ Use needlenose pliers to remove the circuit board (PCB) with reed switch from the flow meter.
- ✂ Slide the PCB with the new reed switch into the holder until it clips in position.
- ✂ Reconnect the plug connection.

### **4.3 Flow Meter (Cold Supply Water) Replacement**

- ✂ Service Panel Removal, 022 4.2.
- ✂ Remove the screws securing temperature limiter F2 (030 Fig. 3, Pos. 2).
- ✂ Carefully lift the temperature limiter slightly.
- ✂ Slide the flow meter up and out of its holder on the water softener.
- ✂ Disconnect the plug connection from the reed switch and disconnect the hoses.
- ✂ Install the new flow meter by following these instructions in reverse order.

### **4.4 Water Diverter Removal**

- ✂ Remove the right-hand side panel (Side Panel Removal, 010 4.1).
- ✂ Unclamp all hoses from the diverter.
- ✂ Unclip the diverter from the inside of the cabinet and from the mounting bracket on the outside of the machine.



# 1 Technical Data

Solenoid Data					
Valve	Voltage	Flow Pressure	Flow Rate	Connection Length <sup>1)</sup>	Threaded Union
Demineralized water (Y20)	1N AC 220/240 V 50/60 Hz	21.8 - 145 psi (1.5 - 10 bar) <sup>2)</sup>	2.1 gal/min (7.5 L/min)	5.6' (1.7 m)	3/4"

**Table 1:** WaterProof System Data (as per Parts CD)

<sup>1)</sup> The standard WaterProof system hose can be replaced with a 14.8-foot (4.5-meter) version.

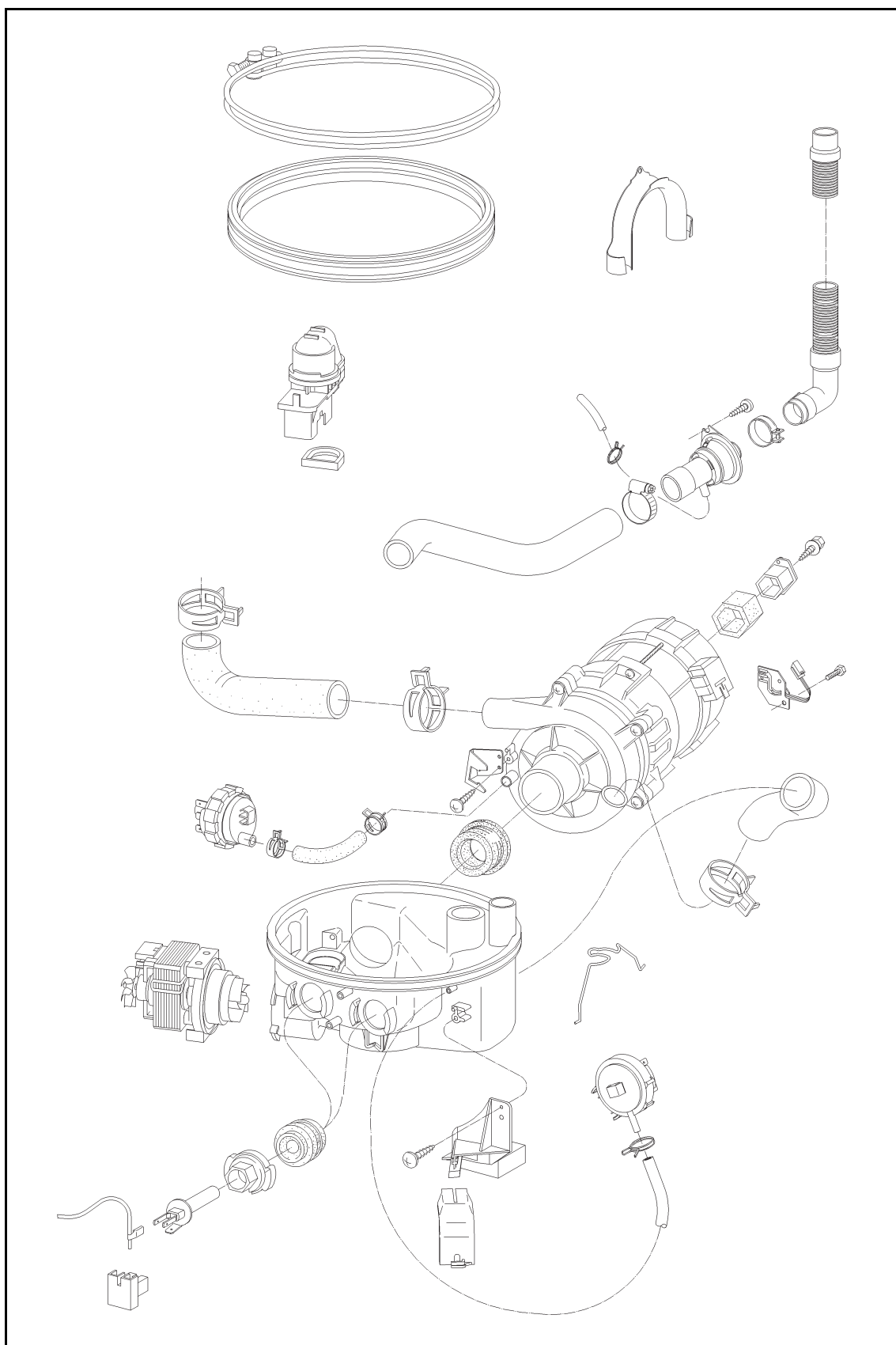
<sup>2)</sup> With a pressure of 7.3 to 21.8 pounds per square inch (0.5 to 1.5 bar), the water intake time is automatically extended by up to 5 minutes.

Drain Pump - Demineralized Water					
Type	Voltage	Power Rating	Max. Head Height	Max. Flow Rate	Winding Protection
BE24B4-087	1N AC 230/240 V 50 Hz	Approx. 85VA	3.3' (1m)	2.6 gal/min (10L/min)	Integrated

**Table 2:** Drain Pump, Installed in Demineralized Water Intake



## 050 Drainage, Sump, Circulation Pump



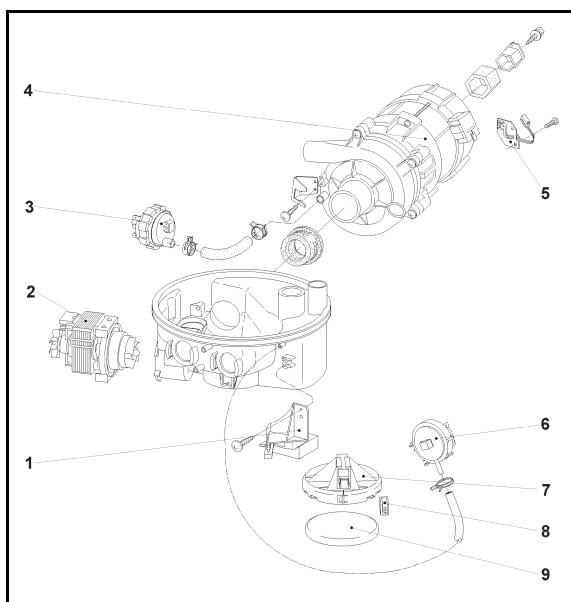
# 1 Technical Data

	Type	Voltage	Power Rating	Max. Flow Pressure	Max. Flow Rate	Winding Protection
Drain pump	BE28B3	1N AC 200/ 220 V 60Hz	Approx. 80 VA	—	min. 4.2 gal/min (16 L/min)	Integrated
Circulation pump	MPE 11– 64/2	1N AC 220V 60Hz	Approx. 600 VA	13 psi (0.9 bar)	106 gal/min (400 L/min)	Integrated

**Table 1:** Pump Data (as per Parts CD)

## 2 Function

### 2.1 Sump and Associated Components



**Fig. 1:** Sump and Associated Components

- |   |                                 |
|---|---------------------------------|
| 1 | Float switch holder             |
| 2 | Drain pump, M8                  |
| 3 | Heater level switch, B1/10      |
| 4 | Circulation pump, M6            |
| 5 | Speed sensor, B3/9              |
| 6 | Water intake level switch, B1/1 |
| 7 | Float switch housing            |
| 8 | Float switch, B8/3              |
| 9 | Float                           |

## **2.2 Drainage**

The machine comes supplied with a 5-foot, flexible drain hose (7/8-inch inner diameter). In non-CD models, the steam condenser is drained internally through the existing drain hose. The machine has a removable non-return valve. The drain height should not exceed 3 feet. Floor drains are permissible; additionally, the drain hose may be lengthened to 13 feet.

## **2.3 Drain Pump M8**

Drain pump M8 (050 Fig. 1, Pos. 2) is located below the cabinet and is connected to the right of the sump. It is controlled directly by the electronic (070 Fig. 5, Pos. 17). It pumps out wash water from the lowest point in the sump via a non-return valve and sends the water via the drain hose to the on-site drain. A vent is provided to prevent siphoning.

## **2.4 Circulation Pump M6**

Circulation pump M6 (050 Fig. 1, Pos. 4) takes in the wash water from the side of the sump **through** the filter combination (030 2.4 Filter System), and pumps it to the spray arms. Before each water intake, the circulation pump is checked via a start routine. There are up to 3 start attempts (each lasts about 2 to 3 seconds) with different voltages. If the speed sensor still does not register any rotation after the third attempt, the WPS valve is not opened and fault code **F 08** (070 Table 51) is displayed.

## **2.5 Speed Sensor B3/9, Gentle Start of Circulation Pump**

The circulation pump is equipped with a speed sensor (050 Fig. 1, Pos. 5) that continually monitors the pump speed and sends appropriate signals (8 pulses per revolution) to the electronic. Here these signals are evaluated and the circulation pump speed is adjusted as necessary to achieve the desired speed (reduced/full speed).

Pulse measurements at the speed sensor are not expected to be made. An open circuit in one of the sensor connections or a blocked circulation pump will cause fault code **F 08** (070 Table 51) to be displayed.

## 2.6 Level Switches

### 2.6.1 Float Switch B8/3

If a water intake hose should leak, the leaking water flows along the outer hose sleeve to the drip pan in the bottom of the machine. When a certain quantity of water has collected in the drip pan, float switch B8/3 (050 Fig. 1, Pos. 8) acts to stop the water flow by closing the WPS solenoid valves Y1, Y12 and/or Y20, resulting in fault code **F 26** (070 Table 51). At the same time, the drain pump is activated to remove the wash water from the cabinet. **The drain pump demand is greater than the incoming water flow rate.** This also applies when one of the solenoid valves does not close correctly and supply water flows constantly into the cabinet. When water flows out of the cabinet overflow into the drip pan, float switch B8/3 will act to switch the water supply off and the drain pump on.

Because the leaked water in the drip pan cannot be removed automatically, the machine will remain blocked until the water has been cleared.

#### **Warning!**

The WaterProof System only operates with the door closed and the machine turned on.

### 2.6.2 Heater Level Switch B1/10

The heater level switch (050 Fig. 1, Pos. 3) is connected directly to the circulation pump (050 Fig. 1, Pos. 3), and registers the water pressure when the pump is operating. When the pump is running and sufficient water is present, level switch (changeover contact) B1/10 closes and the electronic then activates the heater relay during the appropriate program segments.

### 2.6.3 Overflow Level Switch B1/1

As a safety measure to prevent overflows, overflow level switch B1/1 (050 Fig. 1, Pos. 6) is linked to the Live 1 connection to the WaterProof system valves Y1, Y12 and Y20. If the cabinet is full, the overflow level switch acts to open the valve circuit.

## 2.7 NTC Temperature Sensors

NTC Sensor Resistance Values		
Temperature (°F)	Temperature (°C)	Resistance (kΩ)
32	0	Approx. 35.9
41	5	Approx. 28.5
50	10	Approx. 22.7
59	15	Approx. 18.2
68	20	Approx. 14.7
77	25	Approx. 11.9
86	30	Approx. 9.7
95	35	Approx. 8.0
104	40	Approx. 6.6
113	45	Approx. 5.5
122	50	Approx. 4.6
131	55	Approx. 3.8
140	60	Approx. 3.2
149	65	Approx. 2.7
158	70	Approx. 2.3
167	75	Approx. 1.9
176	80	Approx. 1.7
185	85	Approx. 1.4
194	90	Approx. 1.2
199	93	Approx. 1.1
203	95	Approx. 1.0

**Table 2:** NTC Sensor Resistance Values

### **3 Fault Repair**

#### **3.1 Heating Level Switch Does Not Switch On**

##### **Cause**

Heating level switch does not react to water pressure.

##### **Remedy**

- ↯ Check the switching point and continuity of the heating level switch.
- ↯ Replace the heating level switch, if necessary.

##### **Cause**

Excessively foaming detergent or rinse aid in the wash water. This reduces the wash water pressure developed by the circulation pump and applied to the heating level switch.

##### **Remedy**

- ↯ Use a different detergent or rinse aid.

#### **3.2 Premature Failure of Circulation, Dispenser or Drain Pump**

##### **Symptom**

After a short period of operation the pumps listed leak and seals swell up.

##### **Cause**

Possible dispensing of rinsing agent in the final rinse in order to lubricate metal joints in the items being processed. If the rinsing agent contains paraffin oils, the lifetime of components with a sealing function is reduced.

##### **Remedy**

- ↯ Avoid using rinsing agents that contain paraffin oils.
- ↯ Use a Miele-approved rinsing agent.
- ↯ Avoid automatic lubrication, i.e. do not dispense such agents in the machine.
- ↯ As an alternative, lubrication of processed items should be carried out manually with an aerosol after the load has been removed from the machine.

**Note**

To protect seals, do not use disinfecting, alkaline detergents with a high proportion of active chlorine at temperatures above 176°F (80°C).

### 3.3 Circulation Pump Does Not Start

**Cause**

Circulation pump motor winding too hot and the winding protection device 1F3 has tripped (it resets automatically after about 10 minutes). Foreign objects may be blocking the pump.

**Remedy**

- ✂ Check the circulation pump for correct operation; see 070 2.9.3 **S 23**, Checking Outputs 1 to 11.
- ✂ Check the circulation pump connection plug at the electronic (070 Fig. 5, Pos. 17).
- ✂ Check the circulation pump housing for foreign objects, jammed motor, etc. Remove the pump housing, if necessary.

**Danger!**

Be careful. Broken glass or similar could be in the pump impeller chamber and could cause injury.

**Cause**

Operating capacitor C6 defective.

**Remedy**

- ✂ Check the plugs on the operating capacitor and the motor block for correct installation.
- ✂ Replace operating capacitor C6, if necessary.

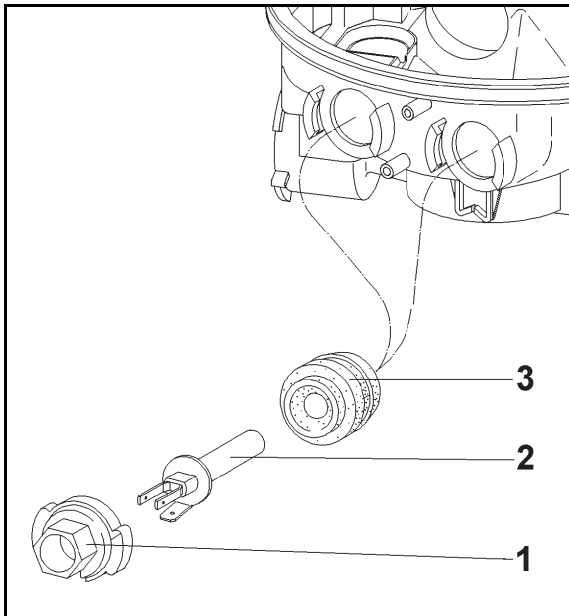


## 4 Service

### 4.1 Speed Sensor B3/9 Check

- ✚ Activate the circulation pump in service mode 2 (070 2.9.3 **S 23**, Checking Outputs 1 to 11).
- ✚ If the circulation pump starts briefly (3 start attempts) and then stops, then the speed sensor is not providing any pulses (display flashes).

### 4.2 NTC Temperature Sensor Replacement



**Fig. 2:** Temperature Sensor with Housing

- ✚ Service Panel Removal, 022 4.2.
- ✚ Toekick Removal, 010 4.6.
- ✚ Remove the holding bracket (080 Fig. 4, Pos. 2) by removing the retaining screws (080 Fig. 4, Pos. 1).
- ✚ Disconnect the temperature sensor electrical connection.
- ✚ Use a suitable open-ended wrench to grasp the holder, and remove it from the bayonet fitting. See 050 Fig. 2, Pos. 2.
- ✚ Pull the temperature sensor out of its seal. See 050 Fig. 2, Pos. 3.
- ✚ Reassemble by following these instructions in reverse order.

### 4.3 Drain Pump Removal

- ✂ Service Panel Removal, 022 4.2.
- ✂ Remove the left side panel (Side Panel Removal, 010 4.1), if possible.
- ✂ Remove the terminal block mounting bracket.
- ✂ Twist the pump clockwise to unlock; remove the red clip, if applicable (usually found on older models).
- ✂ Disconnect the electrical connection.
- ✂ Pull the pump out of the machine.

### 4.4 Sump Removal

- ✂ Tilt the machine onto its right side.
- ✂ Remove the bottom pan.
- ✂ Remove the heater relay mounting bracket.
- ✂ Disconnect the drain pump hose and circulation pump hoses from the sump. Move both pumps out of the way.
- ✂ Take off the float switch assembly.
- ✂ Disconnect the temperature sensors from the sump.
- ✂ Remove the sump from the machine.

### 4.5 Float/Float Switch Removal

- ✂ Tilt the machine onto its right side.
- ✂ Remove the bottom pan.
- ✂ Disconnect the electrical connection from the float switch.
- ✂ Release the float housing; open the housing and take out the float.

## **4.6 Circulation Pump/Speed Sensor Removal**

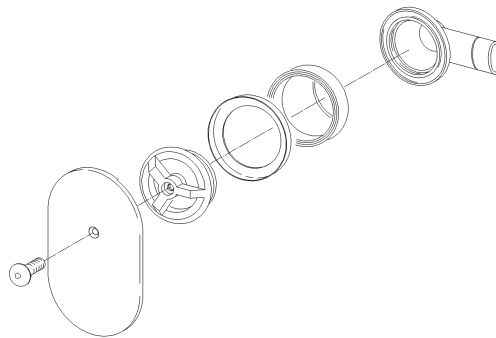
- ✂ Tilt the machine onto its right side.
- ✂ Remove the bottom pan.
- ✂ Disconnect the sump hose in front of the circulation pump.
- ✂ Disconnect all visible hoses from the pump (one is connected to the heater pressure switch).
- ✂ Disconnect the speed sensor wiring harness (red/yellow).
- ✂ Disconnect the electrical connection from the circulation pump.
- ✂ Remove the 8mm bolt securing the circulation pump to the machine rear panel.
- ✂ Take the pump out and unclamp a third hose.
- ✂ Take off the plastic bracket and take out the rubber gasket.
- ✂ Remove the speed sensor (magnet slides out of pump housing; board is secured with a bolt to the pump housing).

## **4.7 Heater Pressure Switch Removal**

- ✂ Tilt the machine onto its right side.
- ✂ Remove the bottom pan.
- ✂ Disconnect the sump hose in front of the circulation pump.
- ✂ Disconnect all visible hoses from the pump (one is connected to the heater pressure switch).
- ✂ Unclamp the hose connecting the heater pressure switch to the circulation pump.
- ✂ Take out the heater pressure switch.

## 061 Air Vent, Cabinet Ventilation

G 7882 CD, G 7883 CD

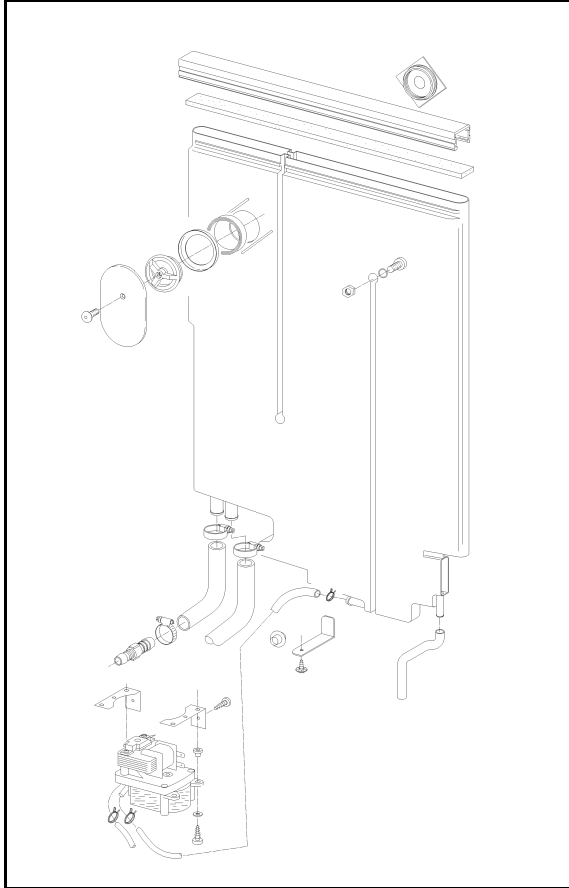


# **1      Technical Data**

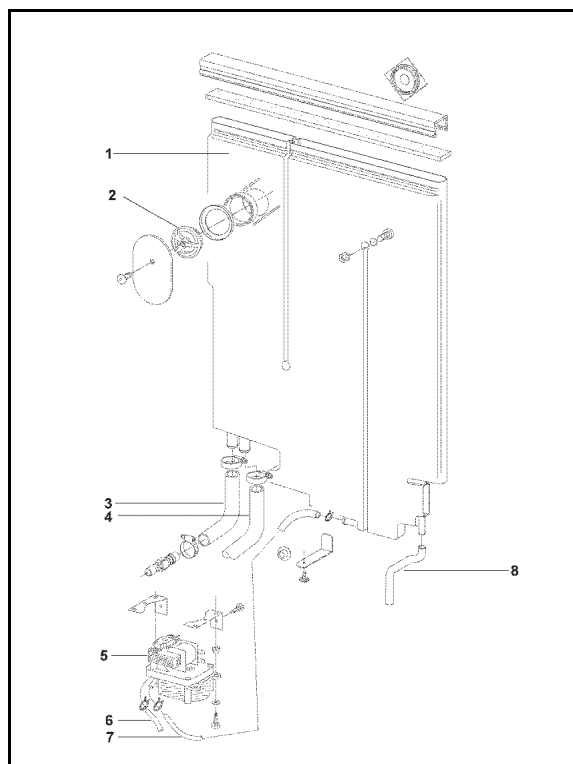
Technical data currently not available.

## 062 Steam Condenser

G 7881, G 7882, G 7883



# 1 Technical Data



**Fig. 1:** Steam Condenser

- |   |  |
|---|--|
| 1 | Steam condenser                          |
| 2 | Steam vent from machine                  |
| 3 | Cold-water inlet from Waterproof System  |
| 4 | Water from steam condenser to flow meter |
| 5 | DOS K 60 drain pump for steam condenser  |
| 6 | Drain hose connected to machine drain    |
| 7 | Intake hose from steam condenser         |
| 8 | Overflow, drains into drip pan           |

## 2 Function

### 2.1 Steam Condenser Function

The purpose of the steam condenser mounted on the rear of the machine is to prevent the excessive discharge of steam. It also serves as a vent for the cabinet.

### 2.2 Water Intake

Water is brought into the steam condenser during a fill cycle via the cold-water inlet valve. This water is in a cooling plate that is separate from the steam that comes from the machine. The water coming in displaces the water in the steam plate. The water that is displaced is then brought into the sump via the water diverter to be used in the cycle. The water that is brought in to the steam plate is by the **cold-water** inlet valve **only**.

### 2.3 Drain

The condensed steam goes to the condensate collector. The water that collects there is then drained out of the condenser by the DOS G 60 pump that is draining the water into the machine drain hose.



## **4 Service**

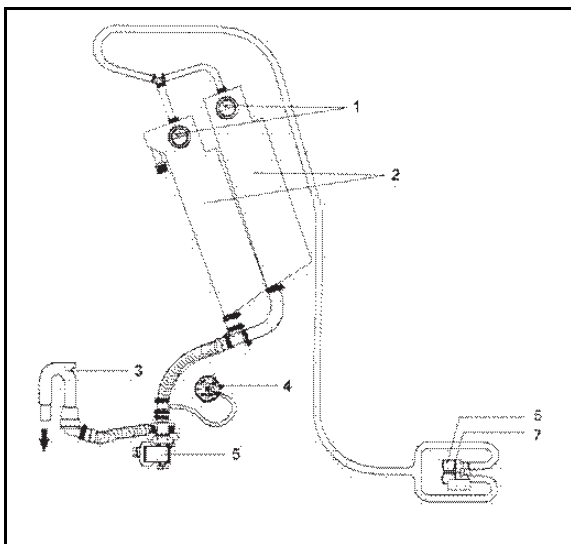
### **4.1 DOS 60/30 Pump Removal**

- ✂ Remove the bottom pan.
- ✂ Disconnect the 2 hoses from the pump.
- ✂ Remove the 2 screws securing the pump's mounting bracket to the rear panel.
- ✂ Remove the pump with mounting bracket.

## 063 Steam Condenser

G 7882 CD, G 7883 CD

### 1 Technical Data

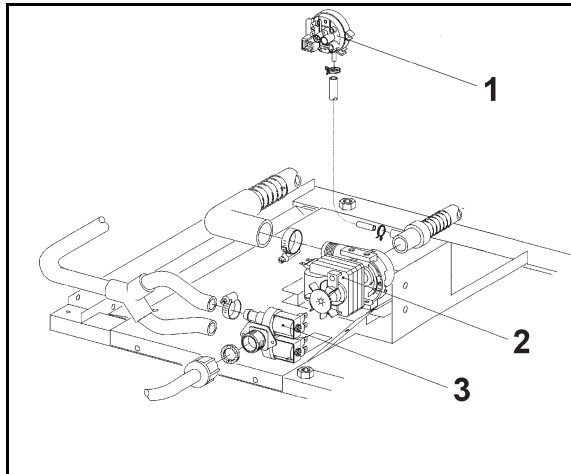


**Fig. 1:** Steam Condenser, CD Models

- |      |                                    |
|------|------------------------------------|
| 1    | Spray nozzle                       |
| 2    | Steam condenser                    |
| 3    | Drain outlet with non-return valve |
| 4    | Condenser overflow level switch    |
| 5    | Condenser drain pump               |
| 6, 7 | Condenser solenoid valves          |

## 2 Function

### 2.1 Overflow Level Switch, B1/2



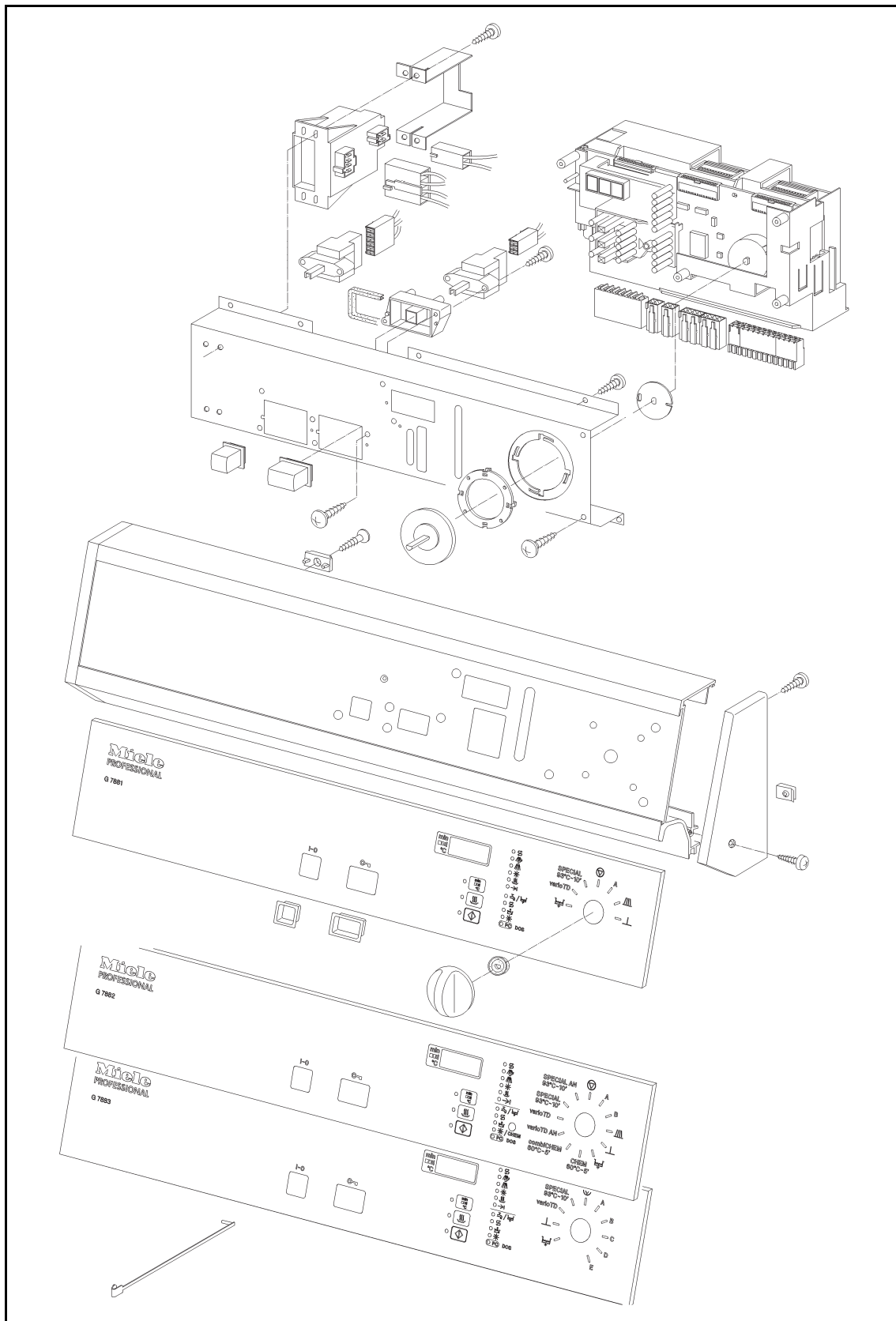
**Fig. 2:** Drying Unit Drip Tray

- |   |  |
|---|--|
| 1 | Level switch - Overflow, B1/2                      |
| 2 | Drain pump, condensate pump, M13                   |
| 3 | Inlet valve - Steam condenser, cold, 1Y22 and 2Y22 |

The hose connection for the overflow level switch (063 Fig. 2, Pos. 1) is in the intake connection just before the condensate pump (063 Fig. 2, Pos. 2) in the water circuit. The overflow level switch itself is positioned slightly raised on the rear of the drying unit. If the water in the steam condenser rises above a certain level, the overflow level switch acts to close the solenoid valves 1Y22 and 2Y22 (063 Fig. 2, Pos. 3). The condensate pump will continue to operate.

## 070 Fascia Panel, Electronic

G 7881, G 7882, G 7883



2 Function

2.1 Fascia Panels

2.1.1 Individual Fascia Panels



Fig. 1: G 7881 Fascia Panel



Fig. 2: G 7882 Fascia Panel



Fig. 3: G 7883 Fascia Panel

2.1.2 Optical Indicators

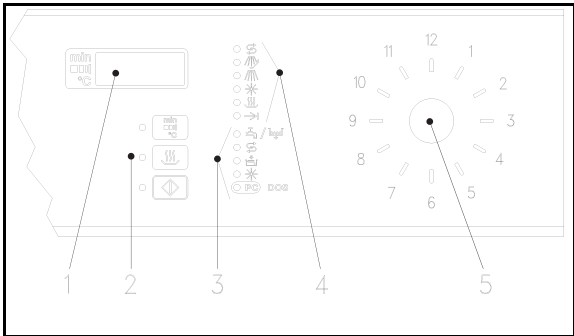


Fig. 4: Optical Indicators

- 1 Digital display
- 2 Program function buttons
- 3 Fault and monitoring indicator LEDs, red
- 4 Program sequence LEDs, yellow
- 5 Program selector switch with settings equivalent to a clock face

	Softener reactivation
	Pre-wash
	Main wash

✱	Final rinse
☄	Drying
→I	Finish

**Table 1:** Program Sequence LEDs

⚡ / 🚰	Water intake/drainage fault
Ⓢ	Salt container empty
🧴	Neutralizing agent empty
✱ / CHEM	Rinse aid/chemical disinfectant empty
ⓄPC / DOS	Optical interface/DOS dispenser module empty

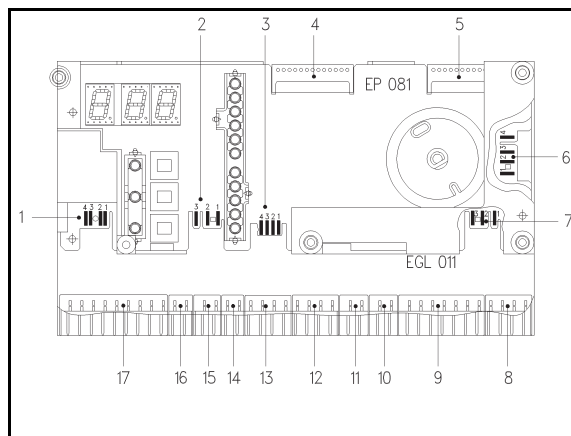
**Table 2:** Fault and Monitoring Indicator LEDs

### 2.1.3 Digital Display

The digital display can be used to show one of three current cleaning parameters – the current suds temperature in °C, the current wash block or the elapsed time of the cleaning program in operation in minutes – as desired. During a cleaning program, these parameters can be selected by pressing the top program function button as appropriate.

## 2.2 Electronic (1N1) Connections

### 2.2.1 Electronic EP 081 with Relay Module EGL 011



**Fig. 5:** Electronic (1N1) EP 081 with EGL 011 Plug Allocation

- 1 Plug connection ST 4 - Check NTC sensor 2R30 / Connection to electronic EZL 030/031 (flow meter input)
- 2 Plug connection ST 2 - Door opening switch 2S4 / Reed switch - Rinse aid, B8/1
- 3 Plug connection ST 5 - Data link to additional module 2N1 and printer interface 3N1

- 4 Plug connection ST 1 - Connection plug from EP 081 to relay module EGL 011
- 5 Plug connection ST 6 - Connection plug from EP 081 to relay module EGL 011
- 6 Plug connection ST 5 - Voltage supply for EGPL from transformer T1
- 7 Plug connection ST 3 - Circulation pump speed sensor B3/9
- 8 Plug connection ST 2 - Dispenser system socket, X1/2 / Reed switch - Reactivation salt, B8/2
- 9 Plug connection ST 2 - Level switch B1/10 / Relay solenoid 2K1/1 / NTC sensor 1R30
- 10 Plug connection ST 4 - Relay solenoid 1K1/1
- 11 Plug connection ST 8 - NTC sensor - Drying
- 12 Plug connection ST 7 - Solenoid valve Y50 / Solenoid valve Y53
- 13 Plug connection ST 7 - Solenoid valve Y38 / Solenoid valve Y51
- 14 Plug connection ST 7 - Solenoid valve Y20 (optional intake pump M7 for non-pressurized demineralized water)
- 15 Plug connection ST 7 - Solenoid valve Y12
- 16 Plug connection ST 3 - Solenoid valve Y1
- 17 Plug connection ST 3 - Circulation pump M6 / Level switch B1/1 / Level switch B8/3 / Drain pump M8

## 2.3 Wash Block Codes

G 7881

1 = Wash
2 = Rinse
3 = Drain
4 = Disinfection vario
5 = Disinfection 93 °C-10' (10 minutes)

**Table 3:** Wash Block Codes

## 2.4 Special Features of Infection Protection Programs

Infection protection programs, e.g., **Disinfection 93° C 10 min**, are programs whose wash and cleaning parameters are set by law. It is not permitted to modify these programs in any way. Some functions or requirements for fault indications vary from those for other programs and are therefore always specially mentioned.

## 2.5 EGPL 081 Programming

### 2.5.1 General Programming Information

If several values are to be modified, these can be set one after the other and then saved by pressing the bottom program function button twice. Program blocks defined as “FIX” blocks cannot be modified.

If a cleaning program has been completed successfully, i.e. all set desired parameters have been achieved, then the **Finish** LED lights up and the program sequence LEDs above it light up and flash in order, making a light chain. The specific selector switch position of programs and the fascia design may be changed or vary between different models. For this reason, programming instructions for machines with a rotary selector switch **always** give the corresponding clock position for the program selector switch setting.

#### **Warning!**

In Germany, for washer-disinfectors covered by Medical Product Legislation (MPG guideline 93/42/EWG, class IIa), all program modifications in the various programming levels **must** be properly documented in the Medical Product Book.

### 2.5.2 General Information - Programming Mode


The programming mode can be quit without saving any parameter changes that may have been made by interrupting the power supply in some way, e.g., by opening the door. When stepping back and forth through the various programming levels the active programming level is only **displayed**, e.g., **E 03**, when the program selector switch is turned to the 12 o'clock setting. There are 33 or 34 programming levels, depending on model (**E 01** to **E 33** or **E 34**). Each setting in the programming levels **E 05** to **E 32** only applies to the cleaning program that has been selected by the program selector switch in the programming mode.

Level	Function
<b>E 01 - E 04</b>	Global parameters, valid for all programs
<b>E 05 - E 32</b>	Program-dependent parameters
<b>E 33</b>	RESET (resets all standard settings)
<b>E 34</b>	Printer time/date setting

**Table 4:** Programming Levels



### 2.5.3 General Information - Service Mode 1

Service mode 1 can be used to advance through the individual program steps of a selected program. Steps should be advanced rapidly with a maximum of 2 seconds of pause. If a step is not advanced, the selected program is continued normally from the step reached. The parameters affecting the fault-monitoring system also apply during the service mode. If, e.g., a heating step is accessed, then a fault is registered if sufficient water has not previously entered the cabinet (water level is checked via the heating level switch). After the start of a program, the current program position is shown via the program sequence indicator. The wash block display is suppressed and the actual temperature is shown normally when selected via the top program function button. The **Drying** function can be selected or deselected via the  button before the start of a program, if it is normally available for the program being checked.

A cleaning program selected in service mode 1 can be quit or interrupted as follows:

- **Open the door**

The door lock is not active in service mode 1.

The cleaning program is interrupted and, when the door is closed again, the program continues in service mode 1 from the step reached.

- **Shut off the machine**

The cleaning program is interrupted and, when power is restored, the program continues in service mode 1 from the step reached.

- **Turn the program selector switch to the 12 o'clock setting**

The selected cleaning program is interrupted or the program currently selected but not started is canceled. The electronic is still in service mode 1. A different program can now be selected and started.

- **Quit service mode 1**

Turn the program selector switch to the 12 o'clock setting and shut off the machine.

### 2.5.4 General Information - Service Mode 2

**Note**

Before making settings in service mode 2 the fault memory should be checked. If service mode 2 is quit with saving, then all entries in the fault memory are deleted.

Service mode 2 can be quit without saving any parameter changes that may have been made by interrupting the power supply in some way (e.g., by opening the door). Service mode 2 is divided into 6 or 7 service levels (**S 21** to **S 26** or **S 27**, depending on model). Printer interface data can only be modified or displayed if a

printer interface is present and activated. When stepping back and forth through the various programming levels the active programming level is only **displayed**, e.g., **S 23**, when the program selector switch is turned to the 12 o'clock setting. Settings in service mode 2 always apply for all cleaning programs, except when impermissible settings have been made in individual cleaning programs. Service mode 2 can be quit without saving any parameter changes that may have been made by interrupting the power supply, e.g., by opening the door.

## 2.6 Program Summaries

### 2.6.1 Program Summary (P 06) - G 7882

Program Block	G 7882 Wash Programs <sup>1)</sup>			
	SPECIAL 93°C-10 min	SPECIAL AN 93°C-10 min	vario TD	vario TD AN
VR 1	[—]	[—]	[10 L cold water]	—
			[1 min]	
			[60 s drainage]	
VR 2	[—]	[—]	—	[15.5 L cold water]
				[1 min]
				[90 s drainage]
HR 1	[10.5 L cold water]	[16 L cold water]	10.5 L cold water	16 L cold water
	[DOS 1 / 40°C]	[DOS 1 / 40°C]	DOS 1 / 40°C	DOS 1 / 40°C
	[[93°C / 10 min]]	[[93°C / 10 min]]	55°C / 5 min	55°C / 5 min
	[60 s drainage]	[90 s drainage]	60 s drainage	90 s drainage
HR 2	[—]	[—]	—	—
CH-DESIN	[—]	[—]	[—]	[—]
SP 1	—	—	—	—
SP 2	9 L cold water	14.5 L cold water	9 L cold water	14.5 L cold water
	DOS 3 immediately	DOS 3 immediately	DOS 3 immediately	DOS 3 immediately
	1 min	1 min	1 min	1 min
	60 s drainage	90 s drainage	60 s drainage	90 s drainage
SP 3	5 L cold water	—	5 L cold water	10.5 L cold water
	1 min		1 min	1 min
	60 s drainage		60 s drainage	90 s drainage
SP 4	—	—	—	—
NS 1	[—]	[—]	—	—
NS 2	[9.5 L demineralized water]	[15 L demineralized water]	9.5 L demineralized water	15 L demineralized water
	[DOS 2 / T2]	[DOS 2 / T2]	DOS 2 / T2	DOS 2 / T2
	[75°C / 3 min]	[75°C / 3 min]	93°C / 5 min	83°C / 10 min
	[60 s drainage]	[90 s drainage]	60 s drainage	90 s drainage

**Table 5:** G 7882 (P 06) Program Summary, Part 1

<sup>1)</sup> The program blocks that appear in bold within the square brackets are fixed and cannot be activated or deactivated, except for the type of water intake. This can be changed in a wash block that cannot be deactivated. Individual values in "[[ ... ]]" can also not be modified.

Program Block	G 7882 Wash Programs <sup>1)</sup>				
	CHEM 60°C-5 min	combi CHEM 60°C-5 min	A (customisable)	vario TD NR	UNIVERSAL
VR 1	—	—	—	10 L cold water	10 L cold water
				1 min	1 min
				60 s drainage	60 s drainage
VR 2	[10 L cold water]	[10 L cold water]	—	—	—
	[1 min]	[1 min]			
	[60 s drainage]	[60 s drainage]			
HR 1	[10.5 L cold water]	[10.5 L cold water]	—	—	10.5 L cold water
	[DOS 1 / 40°C]	[DOS 1 / 40°C]			DOS 1 / 40°C
	[60°C / 3 min]	[55°C / 3 min]			60°C / 3 min
	[60 s drainage]	[—]			60 s drainage
HR 2	[—]	[—]	—	10.5 L cold water	—
				DOS 1 / 40°C	
				55°C / 5 min	
				60 s drainage	
CH-DESIN	[10.5 L cold water]	[[—]]	—	—	[—]
	[DOS 4 immediately]	[DOS 4 immediately]			
	[60°C / 5 min]	[60°C / 5 min]			
	[60 s drainage]	[60 s drainage]			
SP 1	—	—	—	—	—
SP 2	—	14.5 L cold water	—	—	—
		DOS 3 immediately			
		1 min			
		90 s drainage			
SP 3	—	—	—	5 L cold water	—
				1 min	
				60 s drainage	
SP 4	9 L cold water	9 L cold water	—	9 L cold water	9 L cold water
	1 min	1 min		1 min	1 min
	60 s drainage	60 s drainage		60 s drainage	60 s drainage
NS 1	—	—	—	—	—
NS 2	9.5 L demineralized water	9.5 L demineralized water	—	9.5 L demineralized water	9.5 L demineralized water
	DOS 2 / T2	DOS 2 / T2		DOS 2 / T2	DOS 2 / T2
	60°C / 3 min	60°C / 3 min		93°C / 5 min	65°C / 1 min
	60 s drainage	60 s drainage		60 s drainage	60 s drainage

**Table 6:** Program Summary G 7882 (P 06), Part 2

<sup>1)</sup> The program blocks that appear in bold within the square brackets are fixed and cannot be activated or deactivated, except for the type of water intake. This can be changed in a wash block that cannot be deactivated. Individual values in "[[ ... ]]" can also not be modified.

## 2.6.2 Program Summary (P 06) - G 7883

Program Block	G 7883 Wash Programs <sup>1)</sup>			
	SPECIAL 93°C-10 min	vario TD	Customer	Anorganica

Program Block	G 7883 Wash Programs <sup>1)</sup>			
	SPECIAL 93°C-10 min	vario TD	Customer	Anorganica
VR 1	[—]	[10 L cold water]	10 L cold water	—
		[1 min]	1 min	
		[60 s drainage]	60 s drainage	
VR 2	[—]	—	—	10 L cold water
				DOS 3 immediately
				50°C / 1 min
				60 s drainage
HR 1	[10.5 L cold water]	10.5 L cold water	—	—
	[DOS 1 / 40°C]	DOS 1 / 40°C		
	[93°C / 10 min]	55°C / 5 min		
	[60 s drainage]	60 s drainage		
HR 2	[—]	—	10.5 L hot water	10.5 L hot water
			DOS 1 / 40°C	DOS 1 / 40°C
			80°C / 3 min	75°C / 3 min
			60 s drainage	60 s drainage
CH-DESIN	[—]	[—]	—	—
SP 1	—	—	—	—
SP 2	9 L hot water	9 L hot water	9 L hot water	9 L hot water
	DOS 3 immediately	DOS 3 immediately	DOS 3 immediately	DOS 3 immediately
	1 min	1 min	1 min	1 min
	60 s drainage	60 s drainage	60 s drainage	60 s drainage
SP 3	5 L hot water	5 L hot water	5 L hot water	5 L demineralized water
	1 min	1 min	1 min	1 min
	60 s drainage	60 s drainage	60 s drainage	60 s drainage
SP 4	—	—	9 L demineralized water	9 L demineralized water
			1 min	1 min
			60 s drainage	60 s drainage
NS 1	[—]	—	—	—
NS 2	[9.5 L demineralized water]	9.5 L demineralized water	9.5 L demineralized water	9.5 L demineralized water
	[75°C / 3 min]	93°C / 5 min	75°C / 1 min	70°C / 1 min
	[60 s drainage]	60 s drainage	60 s drainage	60 s drainage

**Table 7:** Program Summary G 7883 (P 06), Part 1

<sup>1)</sup> The program blocks that appear in bold within the square brackets are fixed and cannot be activated or deactivated, except for the type of water intake. This can be changed in a wash block that cannot be deactivated. Individual values in "[[ ... ]]" can also not be modified.

Program Block	G 7883 Wash Programs <sup>1)</sup>				
	Organica	Standard	Universal	Intensive	Plastic
VR 1	—	—	10 L cold water	10 L cold water	10 L cold water
			1 min	1 min	1 min
			60 s drainage	60 s drainage	60 s drainage
VR 2	—	—	—	—	—
HR 1	10.5 L hot water	—	—	—	—
	DOS 1 / 40°C				
	65°C / 3 min				
	60 s drainage				

Program Block	G 7883 Wash Programs <sup>1)</sup>				
	Organica	Standard	Universal	Intensive	Plastic
HR 2	10.5 L hot water	<b>[10.5 L hot water]</b>	<b>[10.5 L hot water]</b>	10.5 L hot water	10.5 L hot water
	DOS 1 / 40°C	<b>[DOS 1 / 40°C]</b>	<b>[DOS 1 / 40°C]</b>	DOS 1 / 40°C	DOS 1 / 40°C
	85°C / 3 min	<b>[75°C / 3 min]</b>	<b>[80°C / 3 min]</b>	85°C / 3 min	55°C / 5 min
	60 s drainage	<b>[60 s drainage]</b>	<b>[60 s drainage]</b>	60 s drainage	60 s drainage
CH-DESIN	—	<b>[—]</b>	<b>[—]</b>	<b>[—]</b>	<b>[—]</b>
SP 1	—	—	—	—	—
SP 2	9 L hot water	9 L hot water	9 L hot water	9 L hot water	9 L hot water
	DOS 3 immediately	DOS 3 immediately	DOS 3 immediately	DOS 3 immediately	DOS 3 immediately
	1 min	1 min	1 min	1 min	1 min
	60 s drainage	60 s drainage	60 s drainage	60 s drainage	60 s drainage
SP 3	5 L hot water	—	5 L hot water	—	5 L cold water
	1 min		1 min		1 min
	60 s drainage		60 s drainage		60 s drainage
SP 4	9 L demineralized water	9 L demineralized water	9 L demineralized water	9 L demineralized water	9 L demineralized water
	1 min	1 min	1 min	1 min	1 min
	60 s drainage	60 s drainage	60 s drainage	60 s drainage	60 s drainage
NS 1	—	—	—	9.5 L demineralized water	9.5 L demineralized water
				00°C / 1 min	00°C / 1 min
				60 s drainage	60 s drainage
NS 2	9.5 L demineralized water	<b>9.5 L demineralized water</b>	9.5 L demineralized water	9.5 L demineralized water	9.5 L demineralized water
	80°C / 1 min	<b>75°C / 1 min</b>	75°C / 1 min	80°C / 1 min	55°C / 1 min
	60 s drainage	<b>60 s drainage</b>	60 s drainage	60 s drainage	60 s drainage

**Table 8:** Program Summary G 7883 (P 06), Part 2

<sup>1)</sup> The program blocks that appear in bold within the square brackets are fixed and cannot be activated or deactivated, except for the type of water intake. This can be changed in a wash block that cannot be deactivated. Individual values in "[[ ... ]]" can also not be modified.

## 2.7 Software Index Versions, Program Sequence Plans

### 2.7.1 List of Software Index Versions and Modifications

- **Software index P 00 (start of pilot series)**
- **Software index P 01 (ID 488)**
- **Software index P 02 (ID 524)**
- **Software index P 03 (ID 560)**

Introduction of service mode function S 27.

- **Software index P 04 (ID 585)**

1. Parameter adjustment of all "vario TD" programs.

The washing parameters of programs "vario TD", "vario TD AN" and "B" (vario TD NR of G 7882/CD) increased from 113 °F (45 °C), 3 minutes, to 131 °F (55 °C), 5 minutes.

2. Additional rinse in program SPECIAL 93 °C 10 min.

The rinse SP 3 with reduced water quantity has been activated for program SPECIAL 93 °C 10 min in order to prevent carryover of salt from a reactivation cycle (especially important in the dental field). The change applies to all machines that use this program.

3. Modification of water intake for vario TD.

In order to ensure better cleaning performance, the second water intake for "vario TD" programs is also carried out with cold water. This makes no difference in models G 7881, G 7882 and G 7883, as they do not have a hot-water connection. This change means that in G 7882 and G 7883 CD models, the second water intake is now with cold water.

4. Drainage times - Steam condenser (DHK).

The drainage cycle of the aerosol-injection steam condenser has been modified in order to remove water that has entered from the wash process before closing the steam condenser vent opening.

5. Introduction of function to block STOP.

Service mode level S 26 has introduced a function at selector switch setting 2 which prevents program interruption by selecting STOP. However, if a fault occurs during a program that leads to program interruption, the STOP setting for fault acknowledgement is still required.

6. After ventilating a dispenser with pump, a "0" is no longer displayed but "dox", where the x represents dispenser number 1, 3 or 4.

- **Software index P 05 (ID 860)**

1. If an aerosol-injection steam condenser is installed, the steam condenser (DHK) pause can also be activated without drying in order to, e.g., reduce the level of steam escaping with high-temperature programs.
2. Depending on model (with/without steam condenser (DHK) and with/without drying unit (TA)), service mode 2 (level S 26 - Function 3) offers various options as follows:
  1. S 26 - "-": DHK (aerosol-injection steam condenser) not installed
  2. S 26 - 30: Without additional steam condenser (DHK) pause
  3. S 26 - 31: With additional steam condenser (DHK) pause when drying is not active (applicable to models with/without drying unit (TA))
  4. S 26 - 32: With additional steam condenser (DHK) pause when drying is active (applicable only to models without drying unit (TA))
3. The G 7882 CD is supplied as standard without rinse aid dispensing. If a new electronic module is supplied as a spare part, it must be programmed to activate rinse aid dispensing if this had previously been set.
4. G 7883 and G 7883 CD – The dispensing options in program block CHEM-DESIN have been extended. The order of the setting figures has been adjusted.

Functions (E 03-4x)	Machine Model	
	G 7883 / 83 CD	G 7882 / 82 CD
No dispensing	40	40
Dispensing via DOS 1 immediately	41	—
Dispensing via DOS 1 from 40 °C	42	—
Dispensing via DOS 2 immediately	43	—
Dispensing via DOS 2 from 40 °C	44	—
Dispensing via DOS 3 immediately	45	—
Dispensing via DOS 3 from 40 °C	46	—
Dispensing via DOS 4 immediately	—	47 (was 41)
Dispensing via DOS 4 from 40 °C	—	48 (was 42)

**Table 9:** Extended Dispensing Options

5. Reduction of cleaning temperature level E 01- Function 10.

Previously the reduction of the maximum temperature from 93 °C to 90 °C was only carried out correctly in program block HR1. As in this block the parameters of SPECIAL program are also defined; duration here was also correctly automatically extended from 10 minutes to 25 minutes. All other temperatures > 90 °C then also had to be reduced manually. This is no longer necessary with the modified software.

6. Time basis for ventilation functions (programming mode) modified.

The time basis for automatic ventilation functions has been modified from 1.1 seconds to 1 second.

7. If a reduced water quantity is programmed in program blocks VR2, SP1 or SP2, then heating should not take place in these blocks because the wash pressure is not sufficiently constant and this can lead to the registration of a fault (**F 3E** or **F 27**). The interdependence has been adjusted.
8. With the electronic module EGPL 081 P 05 (ID 860), a diagnostic support file (DUD) for the Miele diagnostic utility (MDU) has been created for the first time.
9. In the programming mode, the range of dispensing options in program block CHEM-DESIN has only been extended for the G 7883 and G 7883 CD. However, values for the other machines have been modified. In service mode level S 26, two new functions have been added under positions 3 and 4. The program summary of G 7882 CD has changed with regard to dispensed agent utilization in the final rinse stage.

– **Software index P 06 (ID 1180)**

1. Clock setting in customer programming mode.

Sometimes the service department is needed to make the changeover from summer time to winter time and vice versa. In order to offer the operator the possibility to set the clock time himself, programming mode level E 34 has been created with which the time and date output at the printer interface can be set. The functionality is equivalent to the clock setting function at service mode S 22 (functions 3 to 7). However, settings will only be accepted if the interface has been activated in service mode S 21. Several seconds may elapse before the current data is output via the interface. Default values are displayed until the current data can be shown.

2. In order to be able to follow the actual program structure on a printout, program block names where no special parameters (such as dispensing or wash temperature) are set are now also printed.

3. Machine number index.

With the introduction of the new control, the packaging of new machines is printed with the number 062 (clock setting for operator).

4. Drain pump pause.

To improve drainage, 2.2 seconds after the drain pump has started, it is stopped for 2.2 seconds and then operated normally until the drainage time has elapsed. This action improves pump ventilation.

5. I<sup>2</sup>C bus fault.

Under certain circumstances, communication problems of the I<sup>2</sup>C bus might not be registered. This only affects communication with the additional module EZL 031/081 and is indicated with fault code **F 11**. If



this fault is registered when an interface is active, the fault code **F 13** is always correctly generated. The modified software ensures that this communication problem is correctly identified.

6. A new diagnostic support file (DUD) for the Miele diagnostic utility (MDU) has been created for electronic module EGPL 081 P 06 (ID 1180).
7. With the introduction of the new control, the machine technical documentation is no longer located behind the cover plate under the door, but is now included with the machine accessory pack which also includes the operating instructions.

– **Software index P 07 (ID 33960)**

1. Hot-air drying filter time reset.

In machines with software index P 06 with a drying unit (TA), both filters are always active. As new G 7891-93 models have only one fine filter, the use of a single filter is taken into consideration. This modification has no effect on previous machine versions.

2. Creation of a batch number.

The protocol (report) function has been extended to include the creation of a batch number and the printer interface has been modified accordingly. The control transmits a 2-digit version number, which can be created via the diagnostic support file (DUD) to the interface, and the interface creates a 6-digit sequential batch number. The version number is required in order to be able to differentiate between new and old protocols should the printer interface be replaced because a new interface always starts with the number 000001. With version number 00, the creation of a batch number is suppressed. In old control versions up to P 06, a batch number is not created, even with a new interface.

3. Door lock.

The routine to lock the door has been modified. From software index P 07, the door is locked immediately after a program has started.

4. Dispenser relay control with EZQ 081.

Due to a change in legal requirements, all disinfectors with the control family MC Novo must be fitted with a dispenser relay control by the end of 2007. This is to be certain that continuous dispensing can be definitely avoided. In order to ensure backwards compatibility with older controls, service mode S 26 has been extended with function 5.

5. Fault codes with EZQ 081 (print texts of the serial interfaces).

The printed texts have been extended to include the dispenser relay control functions. The following fault codes have been established which will only be evaluated with active dispenser relay control (S 26 - 51):

**F 31:** Dispenser relay control cannot be monitored or is defective (dispenser relay control).

**F 32:** Faulty activation, dispenser relay on EGPL or EZL stuck (dispensing relay).

**F 33:** Maximum permitted activation time exceeded (dispensing time).

#### 6. Control modifications, corrections and extensions.

The automatic ventilation times stored in the electronic module have been adjusted for the internal dispenser pump DOS 3.

When an electronic module is reset, the dispenser control settings (E 02 - Functions 9 - 11) are no longer overwritten. This means that now when an old electronic module is replaced with a new one and the flow control is deactivated at the same time, this will not be reactivated after a reset.

#### 7. Creation of new diagnostic support file (DUD).

A new diagnostic support file (DUD) for the Miele diagnostic utility (MDU) has been created for electronic module EGPL 081 P 07 (ID 1290).

### 2.7.2 Program Sequence Plans - G 7882, G 7882 CD (EGPL 081)

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G7881 G7882 G7882 CD		Programmaufplan												Ausgabe der Elektronik											
Funktion	Wert	Ausgabe der Elektronik												Ausgabe der Elektronik											
		Ausgabe der Elektronik												Ausgabe der Elektronik											
A	1	Ausgabe der Elektronik												Ausgabe der Elektronik											
B	2	Ausgabe der Elektronik												Ausgabe der Elektronik											
C	3	Ausgabe der Elektronik												Ausgabe der Elektronik											
D	4	Ausgabe der Elektronik												Ausgabe der Elektronik											
E	5	Ausgabe der Elektronik												Ausgabe der Elektronik											
F	6	Ausgabe der Elektronik												Ausgabe der Elektronik											
G	7	Ausgabe der Elektronik												Ausgabe der Elektronik											
H	8	Ausgabe der Elektronik												Ausgabe der Elektronik											

Program - Index: P03  
 Elektronisch: EGPL081  
 CAD: 05350373  
 Blatt 10 von 11  
 03  
 G7881, G7882, G7882 CD  
 070-15  
 070-15

**Fig. 6:** Software Index P 03, Version 03

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		1		2		3		4		5		6		7		8		9		10		11		12	
		G7881		G7882		G7882 CD		G7881		G7882		G7882 CD		G7881		G7882		G7882 CD		G7881		G7882		G7882 CD	
A	Funktion	Ver	Programmablauf										Ausgabe der Elektronik												
B	Funktion	Ver	programmierbare Funktion										Ausgabe der Elektronik												
C	Funktion	Ver	programmierbare Funktion										Ausgabe der Elektronik												
D	Funktion	Ver	programmierbare Funktion										Ausgabe der Elektronik												
E	Funktion	Ver	programmierbare Funktion										Ausgabe der Elektronik												
F	Funktion	Ver	programmierbare Funktion										Ausgabe der Elektronik												
G	Funktion	Ver	programmierbare Funktion										Ausgabe der Elektronik												
H	Funktion	Ver	programmierbare Funktion										Ausgabe der Elektronik												

Program - Index: P44-POS  
Elektronik: EGPL81

CAD 05358972  
Blatt 1 von 1  
Aut.-Nr. 7882

002 Programmablaufplan (EPL81)  
G7881, G7882, G7882 CD  
Bezeichnung

**Fig. 7: Software Index P 04 - P 05, Version 02**

1		2		3		4		5		6		7		8		9		10		11		12	
G7801		G7802		G7802 CD		G7802		G7802		G7802		G7802		G7802		G7802		G7802		G7802		G7802	
Funktion		Wert		Programmablauf		Step 10		programmierbare Funktion		programmierbare Funktion		programmierbare Funktion		programmierbare Funktion		programmierbare Funktion		programmierbare Funktion		programmierbare Funktion		programmierbare Funktion	
1		2		3		4		5		6		7		8		9		10		11		12	
1		2		3		4		5		6		7		8		9		10		11		12	
1		2		3		4		5		6		7		8		9		10		11		12	
1		2		3		4		5		6		7		8		9		10		11		12	
1		2		3		4		5		6		7		8		9		10		11		12	
1		2		3		4		5		6		7		8		9		10		11		12	
1		2		3		4		5		6		7		8		9		10		11		12	
1		2		3		4		5		6		7		8		9		10		11		12	
1		2		3		4		5		6		7		8		9		10		11		12	
1		2		3		4		5		6		7		8		9		10		11		12	
1		2		3		4		5		6		7		8		9		10		11		12	
1		2		3		4		5		6		7		8		9		10		11		12	
1		2		3		4		5		6		7		8		9		10		11		12	
1		2		3		4		5		6		7		8		9		10		11		12	
1		2		3		4		5		6		7		8		9		10		11		12	
1		2		3		4		5		6		7		8		9		10		11		12	
1		2		3		4		5		6		7		8		9		10		11		12	
1		2		3		4		5		6		7		8		9		10		11		12	
1		2		3		4		5		6		7		8		9		10		11		12	
1		2		3		4		5		6		7		8		9		10		11		12	
1		2		3		4		5		6		7		8		9		10		11		12	
1		2		3		4		5		6		7		8		9		10		11		12	
1		2		3		4		5		6		7		8		9		10		11		12	
1		2		3		4		5		6		7		8		9		10		11		12	
1		2		3		4		5		6		7		8		9		10		11		12	
1		2		3		4		5		6		7		8		9		10		11		12	
1		2		3		4		5		6		7		8		9		10		11		12	
1		2		3		4		5		6		7		8									

**Fig. 8: Software Index P 04 - P 06, Version 03**

**Fig. 9:** Software Index P 00 - P 01, Version 02

[illegible]

**Fig. 10:** Software Index P 02, Version 03

1 2 3 4 5 6 7 8 9 10 11 12  
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G7863  
 G7863 CD

A Funktion Vert Programmierung  
 B  
 C  
 D  
 E  
 F  
 G  
 H

1 2 3 4 5 6 7 8 9 10 11 12  
 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000 1001 1002 1003 1004 1005 1006 1007 1008 1009 1010 1011 1012 1013

**Fig. 11: Software Index P 03, Version 04**



**Fig. 13: Software Index P 05 - P 06, Version 02**

## 2.8 Programming Mode - Programming Levels E 01 to E 34

### 2.8.1 E 01, Program-Independent Functions

- Water hardness settings
- Wash blocks with/without heating
- Wash blocks with reduced water quantity
- Delay start selection
- Various water intakes

For programming mode access, see Programming Mode Summary, 070 4.1.

Program Level E 01		
Program Selector Switch Setting	Display	Function
1 o'clock	e.g., 19 <sup>1)</sup>	Setting water hardness in °d (degree of German hardness), depending on max. water quantity of a program.
2 o'clock	20	Actual temperature as standard display
	21	Elapsed time as standard display
	22	Display of active wash block as standard display
3 o'clock	30	2nd wash block VR2 (pre-wash 2) without heating
	31	2nd wash block VR2 (pre-wash 2) with heating to 40 °C
	32	2nd wash block VR2 (pre-wash 2) with heating to 50 °C
	33	2nd wash block VR2 (pre-wash 2) with heating to 60 °C
4 o'clock	40	6th wash block SP1 (interim rinse 1) without heating
	41	6th wash block SP1 (interim rinse 1) with heating to 40 °C
	42	6th wash block SP1 (interim rinse 1) with heating to 50 °C
	43	6th wash block SP1 (interim rinse 1) with heating to 60 °C

Program Level E 01		
Program Selector Switch Setting	Display	Function
5 o'clock	50	7th wash block SP2 (interim rinse 2) without heating
	51	7th wash block SP2 (interim rinse 2) with heating to 40°C
	52	7th wash block SP2 (interim rinse 2) with heating to 50°C
	53	7th wash block SP2 (interim rinse 2) with heating to 60°C
6 o'clock	60	8th wash block SP3 (interim rinse 3) without heating
	61	8th wash block SP3 (interim rinse 3) with heating to 40°C
	62	8th wash block SP3 (interim rinse 3) with heating to 50°C
	63	8th wash block SP3 (interim rinse 3) with heating to 60°C
7 o'clock	70	9th wash block SP4 (interim rinse 4) without heating
	71	9th wash block SP4 (interim rinse 4) with heating to 40°C
	72	9th wash block SP4 (interim rinse 4) with heating to 50°C
	73	9th wash block SP4 (interim rinse 4) with heating to 60°C
8 o'clock	80	VR1 and VR2 (pre-wash 1 and 2) with programmed water quantity
	81	VR1 (pre-wash 1) with 5.5 L (anesthetics 11 L) / VR2 (pre-wash 2) with programmed water quantity
	82	VR1 (pre-wash 1) with programmed water quantity / VR2 (pre-wash 2) with 5.5 L (anesthetics 11 L)
	83	VR1 and VR2 (pre-wash 1 and 2) with 5.5 L (anesthetics 11 L) water



Program Level E 01		
Program Selector Switch Setting	Display	Function
9 o'clock	90	SP1 and SP3 (interim rinse 1 and 3) with programmed water quantity
	91	SP1 (interim rinse 1) with 5 L (anesthetics 10.5 L) / SP3 (interim rinse 3) with programmed water quantity
	92	SP1 (interim rinse 1) with programmed water quantity / SP3 (interim rinse 3) with 5 L (anesthetics 10.5 L)
	93	SP1 and SP3 (interim rinse 1 and 3) with 5 L (anesthetics 10.5 L) water
10 o'clock	100	No delay start possible with cleaning temperatures up to 199 °F (93 °C)
	101	Delay start possible with cleaning temperatures up to 199 °F (93 °C)
	102 <sup>2)</sup>	No delay start possible and max. cleaning temperature 194 °F (90 °C)
	103 <sup>2)</sup>	Delay start possible and max. cleaning temperature 194 °F (90 °C)
11 o'clock	110	Set demineralized water intakes
	111	Always cold water instead of demineralized water
	112 <sup>3)</sup>	Always hot water instead of demineralized water
	113 <sup>4)</sup>	All water intakes with demineralized water (available as option with G 7881)

**Table 10: Program Level E 01**

- <sup>1)</sup> If the display flashes, then the set water hardness level is not permitted for the wash block currently in operation. Standard setting is **19** on machines supplied with water softener.
- <sup>2)</sup> Holding times in heating steps increased from 15 minutes to 25 minutes in programs with legally set cleaning parameters.
- <sup>3)</sup> Not programmable with the G 7881 and G 7882, as these do not have a hot-water option.
- <sup>4)</sup> If this option is programmed, the cold-water line still has to be connected to either cold or DI water intake for the steam condenser.

## 2.8.2 E 02, Dispenser Settings

- Priming (ventilation) of dispenser systems
- Dispenser time
- Dispensed concentration

- Flow rate monitoring
- Delay start selection

If no external dispenser system is connected to DOS 1 (no concentration set for DOS 1), then, with the selector switch set to the 1 o'clock position, the detergent dispenser flap can be opened by pressing the **min°C** button. With an external DOS module and a set concentration, priming is carried out automatically for 90 seconds. An interruption of the 90 seconds is possible but not permitted.

For programming mode access, see Programming Mode Summary, 070 4.1.

Program Level E 02		
Program Selector Switch Setting	Display	Function
1 o'clock	d 01	Priming (90 s) of DOS 1 dispenser system with countdown display. Or activation of DOS 1 so long as top button is pressed (dispenser concentration is then not set). <sup>1)</sup>
2 o'clock	e.g., 0.50 or 10	DOS 1 dispenser concentration from 0.1 - 0.8% in 0.05% steps, or dispenser time in seconds (10 s) <sup>2)</sup>
3 o'clock	d 02	Activation of DOS 2 (rinse aid) so long as top button is pressed
4 o'clock	60	Set dispenser time (60 s) for rinse aid. Modification not possible.
5 o'clock	d 03	Priming (210 s) of DOS 3 dispenser system with countdown display <sup>3)</sup>
6 o'clock	e.g., 0.10	DOS 3 dispenser concentration from 0.05 - 0.5% in 0.05% steps, or dispenser time in seconds <sup>2)</sup>
7 o'clock	d 04	Priming (90 s) of DOS 4 dispenser system with countdown display <sup>3)</sup>
8 o'clock	e.g., 1.00	DOS 4 dispenser concentration from 0.5 - 1.2% in 0.05% steps, or dispenser time in seconds <sup>2)</sup>
9 o'clock	90	Flow rate monitoring of DOS 1 not active
	91	Flow rate monitoring of DOS 1 active
10 o'clock	100	Flow rate monitoring of DOS 2 and DOS 3 not active
	101	Flow rate monitoring of DOS 2 active and DOS 3 not active
	102	Flow rate monitoring of DOS 2 not active and DOS 3 active
	103	Flow rate monitoring of DOS 2 and DOS 3 active
11 o'clock <sup>4)</sup>	110	Flow rate monitoring of DOS 4 not active
	111	Flow rate monitoring of DOS 4 active

**Table 11: Program Level E 02**

<sup>1)</sup> Only with dispenser pump installed. If no external dispenser system is installed, the detergent dispenser flap solenoid in the door is activated for 90 seconds and the flap opens.

<sup>2)</sup> Only for programs with dispenser pump installed.

<sup>3)</sup> Only with dispenser pump installed and set concentration.

<sup>4)</sup> Only selectable when DOS 4 can be used (G 7882).

### 2.8.3 E 03, Dispensing

- Individual wash blocks with/without dispensing

For programming mode access, see Programming Mode Summary, 070 4.1.

Program Level E 03		
Program Selector Switch Setting	Display	Function
1 o'clock	10	Without dispensing in wash block 2 (VR2) (pre-wash 2)
	11	With DOS 1 dispensing in wash block 2 (VR2) (pre-wash 2) direct
	12	With DOS 1 dispensing in wash block 2 (VR2) (pre-wash 2) from 40°C
	13	With DOS 3 dispensing in wash block 2 (VR2) (pre-wash 2) direct
	14	With DOS 3 dispensing in wash block 2 (VR2) (pre-wash 2) from 40°C
	15	With DOS 4 dispensing in wash block 2 (VR2) (pre-wash 2) direct
	16	With DOS 4 dispensing in wash block 2 (VR2) (pre-wash 2) from 40°C
2 o'clock	20	Without dispensing in wash block 3 (HR1) (main wash 1)
	21	With DOS 1 dispensing in wash block 3 (HR1) (main wash 1) direct
	22	With DOS 1 dispensing in wash block 3 (HR1) (main wash 1) from 40°C
	23	With DOS 3 dispensing in wash block 3 (HR1) (main wash 1) direct
	24	With DOS 3 dispensing in wash block 3 (HR1) (main wash 1) from 40°C
	25	With DOS 4 dispensing in wash block 3 (HR1) (main wash 1) direct
	26	With DOS 4 dispensing in wash block 3 (HR1) (main wash 1) from 40°C

Program Level E 03		
Program Selector Switch Setting	Display	Function
3 o'clock	30	Without dispensing in wash block 4 (HR2) (main wash 2)
	31	With DOS 1 dispensing in wash block 4 (HR2) (main wash 2) direct
	32	With DOS 1 dispensing in wash block 4 (HR2) (main wash 2) from 40 °C
	33	With DOS 2 dispensing in wash block 4 (HR2) (main wash 2) direct
	34	With DOS 2 dispensing in wash block 4 (HR2) (main wash 2) from 40 °C
	35	With DOS 3 dispensing in wash block 4 (HR2) (main wash 2) direct
	36	With DOS 3 dispensing in wash block 4 (HR2) (main wash 2) from 40 °C
	37	With DOS 4 dispensing in wash block 4 (HR2) (main wash 2) direct
	38	With DOS 4 dispensing in wash block 4 (HR2) (main wash 2) from 40 °C
4 o'clock	40	Without dispensing in wash block 5 (CHEM-DESIN) (chemical disinfection)
	41	With DOS 4 dispensing in wash block 5 (CHEM-DESIN) (chemical disinfection)
	42	With DOS 4 dispensing in wash block 5 (CHEM-DESIN) (chemical disinfection) with 40 °C
5 o'clock	50	Without dispensing in wash block 7 (SP2) (interim rinse 2)
	51	With DOS 1 dispensing in wash block 7 (SP2) (interim rinse 2) direct
	52	With DOS 1 dispensing in wash block 7 (SP2) (interim rinse 2) from 40 °C
	53	With DOS 2 dispensing in wash block 7 (SP2) (interim rinse 2) direct
	54	With DOS 2 dispensing in wash block 7 (SP2) (interim rinse 2) from 40 °C
	55	With DOS 3 dispensing in wash block 7 (SP2) (interim rinse 2) direct
	56	With DOS 3 dispensing in wash block 7 (SP2) (interim rinse 2) from 40 °C
	57	With DOS 4 dispensing in wash block 7 (SP2) (interim rinse 2) direct
	58	With DOS 4 dispensing in wash block 7 (SP2) (interim rinse 2) from 40 °C

Program Level E 03		
Program Selector Switch Setting	Display	Function
6 o'clock	60	Without dispensing in wash block 9 (SP4) (interim rinse 4)
	61	With DOS 1 dispensing in wash block 9 (SP4) (interim rinse 4) direct
	62	With DOS 1 dispensing in wash block 9 (SP4) (interim rinse 4) with 40 °C
	63	With DOS 2 dispensing in wash block 9 (SP4) (interim rinse 4) direct
	64	With DOS 2 dispensing in wash block 9 (SP4) (interim rinse 4) with 40 °C
	65	With DOS 3 dispensing in wash block 9 (SP4) (interim rinse 4) direct
	66	With DOS 3 dispensing in wash block 9 (SP4) (interim rinse 4) with 40 °C
	67	With DOS 4 dispensing in wash block 9 (SP4) (interim rinse 4) direct
	68	With DOS 4 dispensing in wash block 9 (SP4) (interim rinse 4) with 40 °C
7 o'clock	70	Without dispensing in wash block 10 (NS1) (final rinse 1)
	71	With DOS 2 dispensing in wash block 10 (NS1) (final rinse 1) direct
	72	With DOS 2 dispensing in wash block 10 (NS1) (final rinse 1) from 40 °C (T5: T5<40 °C)
	73	With DOS 2 dispensing in wash block 10 (NS1) (final rinse 1) from 50 °C (T5: T5<50 °C)
	74	With DOS 2 dispensing in wash block 10 (NS1) (final rinse 1) from 60 °C (T5: T5<60 °C)
	75	With DOS 2 dispensing in wash block 10 (NS1) (final rinse 1) after T5 has been reached
8 o'clock	80	Without dispensing in wash block 11 (NS2) (final rinse 2)
	81	With DOS 2 dispensing in wash block 11 (NS2) (final rinse 2) direct
	82	With DOS 2 dispensing in wash block 11 (NS2) (final rinse 2) from 40 °C (T5: T5<40 °C)
	83	With DOS 2 dispensing in wash block 11 (NS2) (final rinse 2) from 50 °C (T5: T5<50 °C)
	84	With DOS 2 dispensing in wash block 11 (NS2) (final rinse 2) from 60 °C (T5: T5<60 °C)
	85	With DOS 2 dispensing in wash block 11 (NS2) (final rinse 2) after T5 has been reached

**Table 12: Program Level E 03**

## 2.8.4 E 04, Special Functions

- Various display functions
- With/without residual water
- Machine system lock
- Program sequence modifications

For programming mode access, see Programming Mode Summary, 070 4.1.

Program Level E 04		
Program Selector Switch Setting	Display	Function
1 o'clock	e.g., 10	DHK (steam condenser) pause time in 1-min steps from 0 to 15 min <sup>1)</sup>
2 o'clock	20	Without buzzer
	21	Program end indicator
	22	Fault indicator
	23	Fault and program end indicator
	24	Sampling indicator
	25	Program end and sampling indicator
	26	Fault and sampling indicator
3 o'clock	27	Indication of all states (program end, faults, sampling)
	30	Without residual water in the machine (model-dependent)
4 o'clock	31	With 4 L residual water in the machine (model-dependent)
	40	No program sequence modification
5 o'clock	41	30 s pause before last drain cycle (sampling)
	50	Machine locked during drying
6 o'clock	51	Machine can be opened during drying
	e.g., 120	Coarse filter operating hours <sup>1)</sup>
7 o'clock	e.g., 000	If <b>000</b> is saved, the operating hours figure is deleted <sup>1)</sup>
	e.g., 421	Fine filter operating hours <sup>1)</sup>
7 o'clock	e.g., 000	If <b>000</b> is saved, the operating hours figure is deleted <sup>1)</sup>

**Table 13:** Program Level E 04

<sup>1)</sup> Only machines with drying unit and steam condenser (CD version).

## 2.8.5 E 05, Program-Dependent Rated Water Quantity Plus Additional Water

For programming mode access, see Programming Mode Summary, 070 4.1.

Program Level E 05		
Program Select-or Switch Setting	Display	Function (Depending on Cleaning Program)
1 o'clock	0.0	Rated water quantity in accordance with program sequence plan
	0.5 ... 3.0	Rated water quantity plus 0.5 L - 3 L in 0.5-L steps
	5.5 A	For cleaning programs (anesthetics) SCAN, A, B, C: (5.5 L water more than in normal programs)
	5.5 A ... 8.5 A	Plus 0.5 L - 8.5 L in 0.5-L steps
2 o'clock	As described for the 1 o'clock setting, but only applicable for the cleaning program that can be started at the 2 o'clock setting	
3 o'clock	As described for the 1 o'clock setting, but only applicable for the cleaning program that can be started at the 3 o'clock setting	
etc.	...	...

Table 14: Program Level E 05

## 2.8.6 E 06, Program-Dependent Activation of 1st Wash Block VR1 (Prewash 1)

For programming mode access, see Programming Mode Summary, 070 4.1.

Program Level E 06		
Program Select-or Switch Setting	Display	Function (Depending on Cleaning Program)
1 o'clock	1	Flashing display, wash block 1 VR1 (pre-wash 1) not active
	1 <sup>-</sup>	Constant display, dash at top: wash block 1 VR1 (pre-wash 1) activated with KW (cold water)
	1—	Constant display, dash in middle: wash block 1 VR1 (pre-wash 1) activated with WW (hot water)
	1 <sub>-</sub>	Constant display, dash at bottom: wash block 1 VR1 (pre-wash 1) activated with AD (demineralized water)
2 o'clock	As described for the 1 o'clock setting, but only applicable for the cleaning program that can be started at the 2 o'clock setting	
3 o'clock	As described for the 1 o'clock setting, but only applicable for the cleaning program that can be started at the 3 o'clock setting	
etc.	...	...

Table 15: Program Level E 06

## 2.8.7 E 07, Program-Dependent Activation of 2nd Wash Block VR2 (Prewash 2)

For programming mode access, see Programming Mode Summary, 070 4.1.

Program Level E 07		
Program Select- or Switch Setting	Display	Function (Depending on Cleaning Program)
1 o'clock	"2"	Flashing display, wash block 2 VR2 (pre-wash 2) not active
	2 <sup>-</sup>	Constant display, dash at top: wash block 2 VR2 (pre-wash 2) activated with KW (cold water)
	2—	Constant display, dash in middle: wash block 2 VR2 (pre-wash 2) activated with WW (hot water)
	2 <sub>-</sub>	Constant display, dash at bottom: wash block 2 VR2 (pre-wash 2) activated with AD (demineralized water)
2 o'clock	As described for the 1 o'clock setting, but only applicable for the cleaning program that can be started at the 2 o'clock setting	
3 o'clock	As described for the 1 o'clock setting, but only applicable for the cleaning program that can be started at the 3 o'clock setting	
etc.	...	...

**Table 16:** Program Level E 07

## 2.8.8 E 08, Program-Dependent Activation of 3rd Wash Block HR1 (Main Wash 1)

For programming mode access, see Programming Mode Summary, 070 4.1.

Program Level E 08		
Program Selector Switch Setting	Display	Function (Depending on Cleaning Program)
1 o'clock	"3"	Flashing display, wash block 3 HR1 (main wash 1) not active
	3 <sup>-</sup>	Constant display, dash at top: wash block 3 HR1 (main wash 1) activated with KW (cold water)
	3—	Constant display, dash in middle: wash block 3 HR1 (main wash 1) activated with WW (hot water)
	3 <sub>-</sub>	Constant display, dash at bottom: wash block 3 HR1 (main wash 1) activated with AD (demineralized water)
2 o'clock	As described for the 1 o'clock setting, but only applicable for the cleaning program that can be started at the 2 o'clock setting	
3 o'clock	As described for the 1 o'clock setting, but only applicable for the cleaning program that can be started at the 3 o'clock setting	
etc.	...	...

**Table 17:** Program Level E 08



### 2.8.9 E 09, Program-Dependent Temperature Setting T1 in 3rd Wash Block HR1 (Main Wash 1)

For programming mode access, see Programming Mode Summary, 070 4.1.

Program Level E 09		
Program Select- or Switch Setting	Display	Function (Depending on Cleaning Program)
1 o'clock	e.g., 55	Temperature setting in 1 °C steps between 30 °C and 93 °C (some programs 70 °C)
2 o'clock	As described for the 1 o'clock setting, but only applicable for the cleaning program that can be started at the 2 o'clock setting	
3 o'clock	As described for the 1 o'clock setting, but only applicable for the cleaning program that can be started at the 3 o'clock setting	
etc.	...	...

**Table 18:** Program Level E 09

### 2.8.10 E 10, Program-Dependent Setting of Temperature Exposure Time t1 in Wash Block HR1 (Main Wash 1)

For programming mode access, see Programming Mode Summary, 070 4.1.

Program Level E 10		
Program Selector Switch Setting	Display	Function (Depending on Cleaning Program)
1 o'clock	e.g., 10	Setting the exposure time t1 in temperature step T1 in 1-min steps, between 1 min and 15 min
2 o'clock	As described for the 1 o'clock setting, but only applicable for the cleaning program that can be started at the 2 o'clock setting	
3 o'clock	As described for the 1 o'clock setting, but only applicable for the cleaning program that can be started at the 3 o'clock setting	
etc.	...	...

**Table 19:** Program Level E 10

### 2.8.11 E 11, Program-Dependent Activation of 4th Wash Block HR2 (Main Wash 2)

For programming mode access, see Programming Mode Summary, 070 4.1.

Program Level E 11		
Program Select- or Switch Setting	Display	Function (Depending on Cleaning Program)
1 o'clock	4	Flashing display, wash block 4 HR2 (main wash 2) not active
	4 <sup>-</sup>	Constant display, dash at top: wash block 4 HR2 (main wash 2) activated with KW (cold water)
	4 <sup>—</sup>	Constant display, dash in middle: wash block 4 HR2 (main wash 2) activated with WW (hot water)
	4 <sub>-</sub>	Constant display, dash at bottom: wash block 4 HR2 (main wash 2) activated with AD (demineralized water)
2 o'clock	As described for the 1 o'clock setting, but only applicable for the cleaning program that can be started at the 2 o'clock setting	
3 o'clock	As described for the 1 o'clock setting, but only applicable for the cleaning program that can be started at the 3 o'clock setting	
etc.	...	...

Table 20: Program Level E 11

### 2.8.12 E 12, Program-Dependent Temperature Setting T4 in Wash Block HR2 (Main Wash 2)

For programming mode access, see Programming Mode Summary, 070 4.1.

Program Level E 12		
Program Selector Switch Setting	Display	Function (Depending on Cleaning Program)
1 o'clock	e.g., 55	Temperature setting in 1 °C steps between 30 °C and 93 °C (some programs 70 °C)
2 o'clock	As described for the 1 o'clock setting, but only applicable for the cleaning program that can be started at the 2 o'clock setting	
3 o'clock	As described for the 1 o'clock setting, but only applicable for the cleaning program that can be started at the 3 o'clock setting	
etc.	...	...

Table 21: Program Level E 12

### 2.8.13 E 13, Program-Dependent Setting of Temperature Holding Time t4 in Wash Block HR2 (Main Wash 2)

For programming mode access, see Programming Mode Summary, 070 4.1.

Program Level E 13		
Program Selector Switch Setting	Display	Function (Depending on Cleaning Program)

Program Level E 13		
Program Selector Switch Setting	Display	Function (Depending on Cleaning Program)
1 o'clock	e.g., 10	Setting the holding time t4 in temperature step T4 in 1-min steps, between 1 min and 15 min
2 o'clock	As described for the 1 o'clock setting, but only applicable for the cleaning program that can be started at the 2 o'clock setting	
3 o'clock	As described for the 1 o'clock setting, but only applicable for the cleaning program that can be started at the 3 o'clock setting	
etc.	...	...

Table 22: Program Level E 13

### 2.8.14 E 14, Program-Dependent Activation of 5th Wash Block CHEM-DESIN (Chemical Disinfection)

For programming mode access, see Programming Mode Summary, 070 4.1.

Program Level E 14		
Program Selector Switch Setting	Display	Function (Depending on Cleaning Program)
1 o'clock	5	Flashing display, wash block 5 CHEM-DESIN (chemical disinfection) not active
	5	Constant display without dash, wash block 5 CHEM-DESIN (chemical disinfection) active without water intake (Combi CHEM program only)
	5 <sup>—</sup>	Constant display, dash at top: wash block 5 CHEM-DESIN (chemical disinfection) activated with KW (cold water)
	5 <sup>—</sup>	Constant display, dash in middle: wash block 5 CHEM-DESIN (chemical disinfection) activated with WW (hot water)
	5 <sub>—</sub>	Constant display, dash at bottom: wash block 5 CHEM-DESIN (chemical disinfection) activated with AD (demineralized water)
2 o'clock	As described for the 1 o'clock setting, but only applicable for the cleaning program that can be started at the 2 o'clock setting	
3 o'clock	As described for the 1 o'clock setting, but only applicable for the cleaning program that can be started at the 3 o'clock setting	
etc.	...	...

Table 23: Program Level E 14

### 2.8.15 E 15, Program-Dependent Temperature Setting T3 in Wash Block CHEM-DESIN (Chemical Disinfection)

For programming mode access, see Programming Mode Summary, 070 4.1.

Program Level E 15		
Program Selector Switch Setting	Display	Function (Depending on Cleaning Program)
1 o'clock	e.g., 55	Temperature setting in 1 °C steps between 30 °C and 93 °C (some programs 70 °C)
2 o'clock	As described for the 1 o'clock setting, but only applicable for the cleaning program that can be started at the 2 o'clock setting	
3 o'clock	As described for the 1 o'clock setting, but only applicable for the cleaning program that can be started at the 3 o'clock setting	
etc.	...	...

Table 24: Program Level E 15

### 2.8.16 E 16, Program-Dependent Setting of Temperature Holding Time t3 in Wash Block CHEM-DESIN (Chemical Disinfection)

For programming mode access, see Programming Mode Summary, 070 4.1.

Program Level E 16		
Program Selector Switch Setting	Display	Function (Depending on Cleaning Program)
1 o'clock	e.g., 5	Setting the holding time t3 in temperature step T3 in 1-min steps, between 1 min and 15 min
2 o'clock	As described for the 1 o'clock setting, but only applicable for the cleaning program that can be started at the 2 o'clock setting	
3 o'clock	As described for the 1 o'clock setting, but only applicable for the cleaning program that can be started at the 3 o'clock setting	
etc.	...	...

Table 25: Program Level E 16

### 2.8.17 E 17, Program-Dependent Activation of 6th Wash Block SP1 (Interim Rinse 1)

For programming mode access, see Programming Mode Summary, 070 4.1.

Program Level E 17		
Program Selector Switch Setting	Display	Function (Depending on Cleaning Program)

Program Level E 17		
Program Selector Switch Setting	Display	Function (Depending on Cleaning Program)
1 o'clock	6	Flashing display, wash block 6 SP1 (interim rinse 1) not active
	6 <sup>–</sup>	Constant display, dash at top: wash block 6 SP1 (interim rinse 1) activated with KW (cold water)
	6–	Constant display, dash in middle: wash block 6 SP1 (interim rinse 1) activated with WW (hot water)
	6 <sub>–</sub>	Constant display, dash at bottom: wash block 6 SP1 (interim rinse 1) activated with AD (demineralized water)
2 o'clock	As described for the 1 o'clock setting, but only applicable for the cleaning program that can be started at the 2 o'clock setting	
3 o'clock	As described for the 1 o'clock setting, but only applicable for the cleaning program that can be started at the 3 o'clock setting	
etc.	...	...

Table 26: Program Level E 17

### 2.8.18 E 18, Program-Dependent Activation of 7th Wash Block SP2 (Interim Rinse 2)

For programming mode access, see Programming Mode Summary, 070 4.1.

Program Level E 18		
Program Selector Switch Setting	Display	Function (Depending on Cleaning Program)
1 o'clock	7	Flashing display, wash block 7 SP2 (interim rinse 2) not active
	7 <sup>–</sup>	Constant display, dash at top: wash block 7 SP2 (interim rinse 2) activated with KW (cold water)
	7–	Constant display, dash in middle: wash block 7 SP2 (interim rinse 2) activated with WW (hot water)
	7 <sub>–</sub>	Constant display, dash at bottom: wash block 7 SP2 (interim rinse 2) activated with AD (demineralized water)
2 o'clock	As described for the 1 o'clock setting, but only applicable for the cleaning program that can be started at the 2 o'clock setting	
3 o'clock	As described for the 1 o'clock setting, but only applicable for the cleaning program that can be started at the 3 o'clock setting	
etc.	...	...

Table 27: Program Level E 18

## 2.8.19 E 19, Program-Dependent Activation of 8th Wash Block SP3 (Interim Rinse 3)

For programming mode access, see Programming Mode Summary, 070 4.1.

Program Level E 19		
Program Selector Switch Setting	Display	Function (Depending on Cleaning Program)
1 o'clock	8	Flashing display, wash block 8 SP3 (interim rinse 3) not active
	8 <sup>-</sup>	Constant display, dash at top: wash block 8 SP3 (interim rinse 3) activated with KW (cold water)
	8 <sup>-</sup>	Constant display, dash in middle: wash block 8 SP3 (interim rinse 3) activated with WW (hot water)
	8 <sub>-</sub>	Constant display, dash at bottom: wash block 8 SP3 (interim rinse 3) activated with AD (demineralized water)
2 o'clock	As described for the 1 o'clock setting, but only applicable for the cleaning program that can be started at the 2 o'clock setting	
3 o'clock	As described for the 1 o'clock setting, but only applicable for the cleaning program that can be started at the 3 o'clock setting	
etc.	...	...

**Table 28:** Program Level E 19

## 2.8.20 E 20, Program-Dependent Activation of 9th Wash Block SP4 (Interim Rinse 4)

For programming mode access, see Programming Mode Summary, 070 4.1.

Program Level E 20		
Program Selector Switch Setting	Display	Function (Depending on Cleaning Program)
1 o'clock	9	Flashing display, wash block 9 SP4 (interim rinse 4) not active
	9 <sup>-</sup>	Constant display, dash at top: wash block 9 SP4 (interim rinse 4) activated with KW (cold water)
	9 <sup>-</sup>	Constant display, dash in middle: wash block 9 SP4 (interim rinse 4) activated with WW (hot water)
	9 <sub>-</sub>	Constant display, dash at bottom: wash block 9 SP4 (interim rinse 4) activated with AD (demineralized water)
2 o'clock	As described for the 1 o'clock setting, but only applicable for the cleaning program that can be started at the 2 o'clock setting	
3 o'clock	As described for the 1 o'clock setting, but only applicable for the cleaning program that can be started at the 3 o'clock setting	
etc.	...	...

**Table 29:** Program Level E 20

## 2.8.21 E 21, Program-Dependent Activation of 10th Wash Block NS1 (Final Rinse 1)

For programming mode access, see Programming Mode Summary, 070 4.1.

Program Level E 21		
Program Selector Switch Setting	Display	Function (Depending on Cleaning Program)
1 o'clock	10	Flashing display, wash block 10 NS1 (final rinse 1) not active
	10 <sup>-</sup>	Constant display, dash at top: wash block 10 NS1 (final rinse 1) activated with KW (cold water)
	10–	Constant display, dash in middle: wash block 10 NS1 (final rinse 1) activated with WW (hot water)
	10 <sub>-</sub>	Constant display, dash at bottom: wash block 10 NS1 (final rinse 1) activated with AD (demineralized water)
2 o'clock	As described for the 1 o'clock setting, but only applicable for the cleaning program that can be started at the 2 o'clock setting	
3 o'clock	As described for the 1 o'clock setting, but only applicable for the cleaning program that can be started at the 3 o'clock setting	
etc.	...	...

**Table 30:** Program Level E 21

## 2.8.22 E 22, Program-Dependent Temperature Setting T5 in Wash Block NS1 (Final Rinse 1)

For programming mode access, see Programming Mode Summary, 070 4.1.

Program Level E 22		
Program Selector Switch Setting	Display	Function (Depending on Cleaning Program)
1 o'clock	e.g., 55	Temperature setting in 1 °C steps between 30 °C and 93 °C (some programs 70 °C)
2 o'clock	As described for the 1 o'clock setting, but only applicable for the cleaning program that can be started at the 2 o'clock setting	
3 o'clock	As described for the 1 o'clock setting, but only applicable for the cleaning program that can be started at the 3 o'clock setting	
etc.	...	...

**Table 31:** Program Level E 22

## 2.8.23 E 23, Program-Dependent Setting of Temperature Holding Time t5 in Wash Block NS1 (Final Rinse 1)

For programming mode access, see Programming Mode Summary, 070 4.1.

Program Level E 23		
Program Selector Switch Setting	Display	Function (Depending on Cleaning Program)

Program Level E 23		
Program Selector Switch Setting	Display	Function (Depending on Cleaning Program)
1 o'clock	e.g., 10	Setting the holding time t5 in temperature step T5 in 1-min steps, between 1 min and 15 min
2 o'clock	As described for the 1 o'clock setting, but only applicable for the cleaning program that can be started at the 2 o'clock setting	
3 o'clock	As described for the 1 o'clock setting, but only applicable for the cleaning program that can be started at the 3 o'clock setting	
etc.	...	...

Table 32: Program Level E 23

## 2.8.24 E 24, Program-Dependent Activation of 11th Wash Block NS2 (Final Rinse 2)

For programming mode access, see Programming Mode Summary, 070 4.1.

Program Level E 24		
Program Selector Switch Setting	Display	Function (Depending on Cleaning Program)
1 o'clock	11	Flashing display, wash block 11 NS2 (final rinse 2) not active
	11 <sup>-</sup>	Constant display, dash at top: wash block 11 NS2 (final rinse 2) activated with KW (cold water)
	11 <sup>-</sup>	Constant display, dash in middle: wash block 11 NS2 (final rinse 2) activated with WW (hot water)
	11 <sub>-</sub>	Constant display, dash at bottom: wash block 11 NS2 (final rinse 2) activated with AD (demineralized water)
2 o'clock	As described for the 1 o'clock setting, but only applicable for the cleaning program that can be started at the 2 o'clock setting	
3 o'clock	As described for the 1 o'clock setting, but only applicable for the cleaning program that can be started at the 3 o'clock setting	
etc.	...	...

Table 33: Program Level E 24

## 2.8.25 E 25, Program-Dependent Temperature Setting T2 in Wash Block NS2 (Final Rinse 2)

For programming mode access, see Programming Mode Summary, 070 4.1.

Program Level E 25		
Program Selector Switch Setting	Display	Function (Depending on Cleaning Program)
1 o'clock	e.g., 55	Temperature setting in 1 °C steps between 30 °C and 93 °C (some programs 70 °C)
2 o'clock	As described for the 1 o'clock setting, but only applicable for the cleaning program that can be started at the 2 o'clock setting	



Program Level E 25		
Program Selector Switch Setting	Display	Function (Depending on Cleaning Program)
3 o'clock	As described for the 1 o'clock setting, but only applicable for the cleaning program that can be started at the 3 o'clock setting	
etc.	...	...

Table 34: Program Level E 25

### 2.8.26 E 26, Program-Dependent Setting of Temperature Holding Time t2 in Wash Block NS2 (Final Rinse 2)

For programming mode access, see Programming Mode Summary, 070 4.1.

Program Level E 26		
Program Selector Switch Setting	Display	Function (Depending on Cleaning Program)
1 o'clock	e.g., 10	Setting the exposure time t2 in temperature step T2 in 1-min steps, between 1 min and 15 min
2 o'clock	As described for the 1 o'clock setting, but only applicable for the cleaning program that can be started at the 2 o'clock setting	
3 o'clock	As described for the 1 o'clock setting, but only applicable for the cleaning program that can be started at the 3 o'clock setting	
etc.	...	...

Table 35: Program Level E 26

### 2.8.27 E 27, Program-Dependent Activation of 12th Wash Block (Drying) TA1 G 7882 CD, G 7883 CD

For programming mode access, see Programming Mode Summary, 070 4.1.

Program Level E 27		
Program Selector Switch Setting	Display	Function (Depending on Cleaning Program)
1 o'clock	12	Flashing display, wash block 12 TA1 (drying unit) not active
	12	Constant display: wash block 12 TA1 (drying unit only) activated
2 o'clock	As described for the 1 o'clock setting, but only applicable for the cleaning program that can be started at the 2 o'clock setting	
3 o'clock	As described for the 1 o'clock setting, but only applicable for the cleaning program that can be started at the 3 o'clock setting	
etc.	...	...

Table 36: Program Level E 27

### 2.8.28 E 28, Program-Dependent Temperature Setting for Drying TA1 G 7882 CD, G 7883 CD

For programming mode access, see Programming Mode Summary, 070 4.1.

Program Level E 28		
Program Selector Switch Setting	Display	Function (Depending on Cleaning Program)
1 o'clock	e.g., 55	Temperature setting in 1 °C steps between 30 °C and 99 °C
2 o'clock	As described for the 1 o'clock setting, but only applicable for the cleaning program that can be started at the 2 o'clock setting	
3 o'clock	As described for the 1 o'clock setting, but only applicable for the cleaning program that can be started at the 3 o'clock setting	
etc.	...	...

**Table 37:** Program Level E 28

## 2.8.29 E 29, Program-Dependent Setting of Temperature Holding Time tA1 in Drying Block TA1

G 7882 CD, G 7883 CD

For programming mode access, see Programming Mode Summary, 070 4.1.

Program Level E 29		
Program Selector Switch Setting	Display	Function (Depending on Cleaning Program)
1 o'clock	e.g., 10	Setting the holding time tA1 in temperature step TA1 in 1-min steps, between 1 min and 99 min
2 o'clock	As described for the 1 o'clock setting, but only applicable for the cleaning program that can be started at the 2 o'clock setting	
3 o'clock	As described for the 1 o'clock setting, but only applicable for the cleaning program that can be started at the 3 o'clock setting	
etc.	...	...

**Table 38:** Program Level E 29

## 2.8.30 E 30, Program-Dependent Activation of 13th Wash Block (Drying) TR / TA2

For programming mode access, see Programming Mode Summary, 070 4.1.

Program Level E 30		
Program Selector Switch Setting	Display	Function (Depending on Cleaning Program)
1 o'clock	13	Flashing display, wash block 13 TR / TA2 (drying) not active
	13	Constant display: wash block 13 TR / TA2 (drying) activated (drying block TA2 only with TA (drying unit) and TR only without TA)
2 o'clock	As described for the 1 o'clock setting, but only applicable for the cleaning program that can be started at the 2 o'clock setting	

Program Level E 30		
Program Selector Switch Setting	Display	Function (Depending on Cleaning Program)
3 o'clock	As described for the 1 o'clock setting, but only applicable for the cleaning program that can be started at the 3 o'clock setting	
etc.	...	...

Table 39: Program Level E 30

### 2.8.31 E 31, Program-Dependent Temperature Setting for Drying TA2

G 7882 CD, G 7883 CD

For programming mode access, see Programming Mode Summary, 070 4.1.

Program Level E 31		
Program Selector Switch Setting	Display	Function (Depending on Cleaning Program)
1 o'clock	e.g., 55	Temperature setting in 1 °C steps between 30 °C and 99 °C
2 o'clock	As described for the 1 o'clock setting, but only applicable for the cleaning program that can be started at the 2 o'clock setting	
3 o'clock	As described for the 1 o'clock setting, but only applicable for the cleaning program that can be started at the 3 o'clock setting	
etc.	...	...

Table 40: Program Level E 31

### 2.8.32 E 32, Program-Dependent Setting of Temperature Holding Time tA2 in Drying Block TA2

G 7882 CD, G 7883 CD

For programming mode access, see Programming Mode Summary, 070 4.1.

Program Level E 32		
Program Selector Switch Setting	Display	Function (Depending on Cleaning Program)
1 o'clock	e.g., 10	Setting the holding time tA2 in temperature step TA2 in 1-min steps, between 1 min and 95 min
2 o'clock	As described for the 1 o'clock setting, but only applicable for the cleaning program that can be started at the 2 o'clock setting	
3 o'clock	As described for the 1 o'clock setting, but only applicable for the cleaning program that can be started at the 3 o'clock setting	
etc.	...	...

Table 41: Program Level E 32

## 2.8.33 E 33, Resetting Electronic

For programming mode access, see Programming Mode Summary, 070 4.1.

Program Level E 33		
Program Selector Switch Setting	Display	Function (Depending on Cleaning Program)
Immaterial	00	Unprogrammed electronic - Cannot be modified
	PP	With programmed electronic - Can be reset to <b>00</b> or back to <b>PP</b>

**Table 42:** Program Level E 33

## 2.8.34 E 34, Clock Setting (From P 06)

For programming mode access, see Programming Mode Summary, 070 4.1.

Program Level E 34		
Program Selector Switch Setting	Display	
1 o'clock	e.g., 04	Day setting (01 - 31)
2 o'clock	e.g., 09	Month setting (01 - 12)
3 o'clock	e.g., 01	Year setting (00 - 99) = 2000 - 2099
4 o'clock	e.g., 22	Hour setting (00 - 23)
5 o'clock	e.g., 43	Minute setting (00 - 55)

**Table 43:** Program Level E 34

## 2.9 Service Mode 2 - Service Levels S 21 to S 27

### 2.9.1 S 21, Checking Operating Hours / Filter Operating Hours and Printer Interface Activation (RS-232)

For service mode 2 access, see Service Mode 2 Summary, 070 4.3.

Service Level S 21		
Program Selector Switch Setting	Display	Function
1 o'clock	The last 3 fault codes (e.g., F00)	If service mode 2 is quit with saving, then all entries in the fault memory are deleted, see Service Mode 2 Summary, 070 4.3
2 o'clock	Operating hours <sup>1)</sup> in 1000 h (e.g., 001)	—
3 o'clock	Operating hours <sup>1)</sup> in h (e.g., 234)	—

Service Level S 21		
Program Selector Switch Setting	Display	Function
4 o'clock <sup>4)</sup>	40	Serial printer interface not available
	41	Serial printer interface activated
	42	Serial printer interface activated and test printout. In order to receive a printout immediately after entry, press the <b>Start</b> button twice (save).
5 o'clock	Coarse filter operating hours <sup>2)</sup> in h (e.g., 250)	—
6 o'clock	Fine filter operating hours <sup>2)</sup> in h (e.g., 500)	—
7 o'clock	Coarse filter operating hours with reset <sup>3)</sup> (e.g., 010)	—
8 o'clock	Fine filter operating hours with reset <sup>3)</sup> (e.g., 210)	—

**Table 44:** Service Level S 21

<sup>1)</sup> Only periods of cleaning program operation are registered and added together.

<sup>2)</sup> The filter life figures given by the factory can only be displayed or modified if a drying unit is installed (CD models).

<sup>3)</sup> The display of current filter life figures and resetting of figures to those given by the factory is only possible if a drying unit is installed (CD models).

<sup>4)</sup> Interface data can only be set if an activated interface exists.

## 2.9.2 S 22, Setting Printer Interface (RS-232) and Dispenser Pumps

For service mode 2 access, see Service Mode 2 Summary, 070 4.3.

Service Level S 22		
Program Selector Switch Setting	Display	Function
1 o'clock	10	Selected language - German
	11	Selected language - English
	12	Selected language - Italian
	13	Selected language - French
	14	Selected language - Spanish
2 o'clock	20	Paper length 2 inches - New label after 2 inches
	21	Paper length 4 inches - New label after 4 inches
	22	Paper length 6 inches - New label after 6 inches
	23	DIN A4 page printout
	24	Endless printout with 4 blank lines at end of report
3 o'clock	e.g., 04	Day setting (01 - 31)
4 o'clock	e.g., 02	Month setting (01 - 12)
5 o'clock	e.g., 01	Year setting (01 - 99)


Service Level S 22		
Program Selector Switch Setting	Display	Function
6 o'clock	e.g., 11	Hour setting (01 - 23)
7 o'clock	e.g., 45	Minute setting (01 - 59)
8 o'clock	e.g., 108	Capacity - DOS dispenser pump 1, range 10 - 150 mL/min
9 o'clock	—	DOS dispenser pump 2 is rinse aid door dispenser, no capacity setting
10 o'clock	e.g., 18	Capacity - DOS dispenser pump 3, range 10 - 150 mL/min
11 o'clock	e.g., 110	Capacity - DOS dispenser pump 4, range 10 - 150 mL/min

**Table 45: Service Level S 22**

### 2.9.3 S 23, Checking Outputs 1 to 11

For service mode 2 access, see Service Mode 2 Summary, 070 4.3.

#### Note

If the **min °C** button is pressed and held during testing of outputs 1 to 13, then if the  button is pressed, the circulation pump is also activated.

Service Level S 23		
Program Selector Switch Setting	Display	Function
1 o'clock	1	Output 1: Circulation pump
2 o'clock	2	Output 2: Drain pump
3 o'clock	3	Output 3: Water inlet valve (WPS), cold water
4 o'clock	4	Output 4: Water inlet valve (WPS), hot water
5 o'clock	5	Output 5: Water inlet valve (WPS), demineralized water or non-pressurized demineralized water (G 7883 and G 7883 CD only)
6 o'clock	6	Output 6: Reactivation valve
7 o'clock	7	Output 7: DOS 1 dispenser, detergent
8 o'clock	8	Output 8: DOS 2 dispenser, rinse aid
9 o'clock	9	Output 9: Door opener <sup>1)</sup>
10 o'clock	10	Output 10: Heating, water and drying <sup>2)</sup>
11 o'clock	11	Output 11: Heating, water

**Table 46: Service Level S 23**

<sup>1)</sup> If the door opener is checked and the door opens, service mode 2 is then quit because there is a break in the power supply (door contact switch).


<sup>2)</sup> Drying with pulsed power via output 10 is only for washer-disinfectors without a drying unit.

## 2.9.4 S 24, Checking Outputs 12 - 19

For service mode 2 access, see Service Mode 2 Summary, 070 4.3.

Service Level S 24		
Program Selector Switch Setting	Display	Function
1 o'clock	—	Vacant
2 o'clock	12 <sup>1)</sup>	Output 12: DOS 4 dispenser, disinfectant
3 o'clock	13 <sup>1)</sup>	Output 13: DOS 3 dispenser, neutralizing agent
4 o'clock	14 <sup>2)</sup>	Output 14: Drying unit base load
5 o'clock	15 <sup>2)</sup>	Output 15: Drying unit control
6 o'clock	16 <sup>2)</sup>	Output 16: Drying unit fan
7 o'clock	17 <sup>2)</sup>	Output 17: DK <sup>3)</sup> , no function
		Output 17: DHK <sup>4)</sup> 1, spray valve
8 o'clock	18	Output 18: DK <sup>3)</sup> drain
		Output 18: DHK <sup>4)</sup> drain
9 o'clock	19 <sup>2)</sup>	Output 19: DK <sup>3)</sup> , no function
		Output 19: DHK <sup>4)</sup> 2, spray valve

**Table 47:** Service Level S 24

<sup>1)</sup> If the **min °C** button is pressed and held during testing of outputs 12 and 13, then if the  button is pressed, the circulation pump is also activated.

<sup>2)</sup> Outputs 14 to 17 and 19 are only used in washer-disinfectors with drying unit (CD versions).

<sup>3)</sup> DK: Steam condenser functioning with heat exchanger principle.

<sup>4)</sup> DHK: Steam and hot-air condenser operating with spray valves.

## 2.9.5 S 25, Machine Number Setting

For service mode 2 access, see Service Mode 2 Summary, 070 4.3.

Service Level S 25		
Program Selector Switch Setting	Display	Function
1 o'clock	e.g., 1	Last digit of machine number (0 – 9)
2 o'clock	e.g., 2	Next-to-last digit of machine number (0 – 9)
3 o'clock	...	...
4 o'clock	...	...
etc.	...	...
7 o'clock	e.g., 7	Second digit of machine number (0 – 9)
8 o'clock	e.g., 8	First digit of machine number (0 – 9)
9 o'clock	—	Vacant
10 o'clock	—	Vacant

Service Level S 25		
Program Selector Switch Setting	Display	Function
11 o'clock	00	Machine number deleted
	PP	Machine number programmed

**Table 48:** Service Level S 25

### Note

The set machine number is recorded in a printout via the serial interface.

## 2.9.6 S 26, Special Functions

For service mode 2 access, see Service Mode 2 Summary, 070 4.3.

From P 05: Program interruption possible.

From P 05: Display for machines without steam condenser (DHK), display only for machines with pulsed heating.

Dispensing relay monitoring

Service Level S 26		
Program Selector Switch Setting	Display	Function
1 o'clock	PE <sup>1)</sup>	Constant display: Programming mode accessible
		Flashing display: Programming mode blocked
		Flashing display: Service mode 2 access more difficult
2 o'clock	20	Program cancellation is allowed at any time during a cleaning programmed by selecting "STOP"
	21	No program cancellation during a cleaning program by selecting "STOP"
3 o'clock	30	Without additional steam condenser (DHK) pause
	31	With additional steam condenser (DHK) pause (if drying not active)
	32	With additional steam condenser (DHK) pause (if heating element drying active)
4 o'clock	40	Drying using drying unit (TA)
	41	Drying using heater element pulsing (G 7884 only)



Service Level S 26		
Program Selector Switch Setting	Display	Function
5 o'clock <sup>2)</sup>	50	Without use of dispenser relay control EZQ 081.
	51	With use of dispenser relay control EZQ 081.

**Table 49:** Service Level S 26

<sup>1)</sup> If the programming mode is locked, selection of service level 2 is made more difficult. During activation, both buttons must be pressed for 2 seconds.

<sup>2)</sup> From software version P 07.

## 2.9.7 S 27, Program Lock Options (From P 03)

For service mode 2 access, see Service Mode 2 Summary, 070 4.3.

Service Level S 27 <sup>1)</sup>		
Program Selector Switch Setting	Display	Function
1 o'clock	P 1	Constant display: Program at program selector switch setting 1 can be started
		Flashing display: Program at program selector switch setting 1 is locked
2 o'clock	P 2	Constant display: Program at program selector switch setting 2 can be started
		Flashing display: Program at program selector switch setting 2 is locked
3 o'clock to ...	P 3 to ...	etc.
11 o'clock	P 2	Constant display: Program at program selector switch setting 11 can be started
		Flashing display: Program at program selector switch setting 11 is locked

**Table 50:** Service Level S 27

<sup>1)</sup> Only programs that have been allocated to the electronic unit can be locked. If a selected program setting is vacant, — is indicated in the middle segment.

## 2.10 Fault Indication Without Flashing or Lit Fault LEDs

### 2.10.1 General Information

All faults registered by the electronic that do not involve water intake, drainage or the dispenser systems are **saved in a fault code memory and not indicated via any warning LEDs**. The last 3 detected faults are saved provided they are different. The most recently registered fault code is only stored if a different fault code (or no fault code) is already saved. This prevents the possibility of the same fault being recorded 3 times. The fault memory can be deleted via service mode 2; see 070 Table 44.

## 2.11 Fault Indication With Flashing or Lit Fault LEDs

### 2.11.1 General Information

If a fault is registered for which one of the 5 fault LEDs is provided, then the appropriate LED flashes once per second and at the same time a fault code to aid further diagnosis is displayed in the digital display. **This fault code is not saved in the fault memory.** The program sequence indicator showing the stage the program had reached when the fault was detected remains active. When the program selector switch is turned to the 12 o'clock setting, the fault display is deleted and a new program can then be selected and started normally.

If a fault is registered before program start, such as if an activated dispenser check registers an empty container, then the appropriate fault LED (e.g., **DOS**) flashes after program selection and the program cannot be started.

### 2.11.2 Intake/Drain Fault LED

With these faults the top fault LED  /  flashes and the program is interrupted. At the same time one of the following fault codes is indicated in the display:

#### – F 0E

After a delay of 5 seconds a flow meter in the water intake does not provide a minimum of 5 pulses within the next 2 seconds.

If no pulses are registered during the first water intake in a program with legally fixed cleaning parameters, then the program will only advance to the next step if the heating level switch switches to register sufficient water level. If it does not switch, the fault code **F 0E** is displayed.

In the test program the delay time has been extended from 5 seconds to 23 seconds as in this case it may be necessary for the machine water paths to be filled.

#### – F 1E

The water intake is switched off within 5 minutes even though the number of pulses for the set water intake quantity has not been registered.

In programs (first water intake only) with legally fixed cleaning parameters a minimum water quantity is not monitored. To advance from the water intake step the heating level switch must have switched to register sufficient water level. If it does not switch, fault code **F 1E** is displayed if pulses from the flow meter are registered or fault code **F 0E** is displayed when no pulses are detected.


– **F 2E**

During water intake a flow meter provides sufficient pulses but the quantity of water required is not taken in during the given time of 5 minutes.


– **F 3E**

2 seconds after the water intake step the heating level switch is monitored for 2 seconds. If it has not switched, the step is not advanced and fault code **F 3E** is displayed. After a voltage interruption in the appropriate step, the heating level switch is not checked again. As it is possible to set a desired water quantity of 1.5 gallons or 1.3 gallons (5.5 liters or 5 liters) via programmable function E 01 in wash blocks VR1, VR2, SP2 and SP3, then with a desired water quantity less than or equal to 1.6 gallons (6 liters) this fault monitoring is not active.

### 2.11.3 Salt Fault Indicator LED

If insufficient salt is registered in the salt container, then the  LED lights up. The program is not interrupted.

– **F 23**

If reactivation is carried out for a second time after a lack of salt has been registered, the  LED flashes and fault code **F 23** is displayed. This fault is also recorded via the printer interface.

## 3 Fault Repair

### 3.1 Fault Code Summary

#### Cause

See Table 51.

Fault code	Symptom	Cause	Remedy
<b>F00</b>	No registered fault	Machine functioning correctly	None
<b>F0E</b>	Minimum number of pulses (5) not registered within the first 7 seconds. The program is interrupted.	No water intake	Check on-site shutoff valves.
			Check filter in waterproof system.
			Check hoses for kinks and blockages.
			Check waterproof system.
<b>F0E</b>		No pulse provided by flow meter	See Minimum/Maximum Number of Flow Meter Pulses Not Achieved, 041 3.2
		Faulty cold-water connection to steam condenser in appliances that should only be operated with deionized water. If a printer is connected, the program position where the error occurred (e.g., Pos. 123, steam condenser water intake) will be noted.	The steam condensor always requires at least a cold-water connection.
			If there is a deionized-water connection available, it can also be used, though the water temperature may not exceed 95 °F (35 °C).
<b>F1E</b>	Maximum number of pulses during water intake not reached within 5 minutes. Water intake is switched off.	Water is taken in but pulses are irregular and the overflow level switches the water supply off before the maximum number of pulses has been registered.	See Minimum/Maximum Number of Flow Meter Pulses Not Achieved, 041 3.2
			Check overflow level switch for correct operation.
		In programs with legally fixed cleaning parameters, the heating level switch has not switched during the water intake.	Check on-site shutoff valves.
			Check hoses for kinks and blockages.
			Check circulation pump for correct operation.
<b>F2E</b>	Water intake is not completed within the given time of 5 minutes. The program is interrupted.		Check circulation pump for blockages.
			Check heating level switch for correct switching position.
		Desired water intake quantity not reached	Check water pressure of on-site cold and hot water supplies. (Desired pressure is 14.5 to 145 pounds per square inch or 1 to 10 bar.)
			Check on-site shutoff valves.
<b>F2E</b>			Check hoses for kinks and blockages.
			Exchange restrictor insert in waterproof system for a large version.

Fault code	Symptom	Cause	Remedy
<b>F3E</b>	Heating level switch has not switched after water intake	Heating level switch defective	Check circulation pump for correct operation; see service mode 2, 070 2.9.3 <b>S 23</b> , Checking Outputs 1 to 11.
			Check connection plugs and leads.
			Check heating level switch for correct switching point (2 s after circulation pump starts at rated speed).
			Check circulation pump connection hoses for blockages.
			See Heating Level Switch Does Not Switch On, 050 3.1
<b>F4E</b>	Flow meter provides pulses during a non-water intake step	Appropriate water intake valve is open	Check water inlet valve for correct operation.
			Replace waterproof system assembly, if necessary.
			Check if voltage is applied to water inlet valve where machine is switched off. If voltage is applied to water inlet valve when machine is switched off, replace electronic.
<b>FA</b>	The heating level switch has switched after a drainage step	Residual water still in cabinet	Check drain pump.
			Check drain hoses for kinks or blockages.
<b>FSA</b>	The <b>Salt</b> LED has been ignored for too long	Even through the <b>Salt</b> LED has been lit for a period of time, reactivation salt has not been added	Fill salt container with reactivation salt. See fault code <b>F23</b> .
<b>Fdo</b>	During dispensing no medium flow has been detected.	Dispensing container empty. <sup>1)</sup>	Fill the dispensing container.
		Dispenser pump not primed	Prime the dispenser pump; see 070 2.8.2 <b>E 02</b> , Dispenser Settings.
		<b>G 7882 CD and G 7883 CD only:</b> Although there is enough liquid media in the container of dispensing system DOS1, this fault code appears in the display, such as after ventilating dispensing system DOS1 for liquid cleaning agents. A new selection for ventilating DOS1 is not possible. <sup>2)</sup>	After ventilating the dispensing system, wait a few minutes until the float of the flow meter check has fallen again.
			If no dispensing check for liquid cleaning agents is required, change program function E 02 from 91 to 90 (dispensing check deactivation).
			Pull off the plug from the reed contact and secure to the wiring harness using electrical tape.
<b>F01</b>	Wash water temperature T1 in wash block HR1 (main wash) not reached within 60 minutes	Temperature limiter F2 has cut out	Reset temperature limiter F2. See Resetting Temperature Limiter F2 (Thermostat), 030 4.2. If necessary, replace the temperature limiter. See Replacing Temperature Limiter F2 (Thermostat), 030 4.3.
		Heater elements do not heat up	Check heater elements. If necessary, replace a faulty heater element; see Heater Element Replacement, 030 4.5..
		Heating level switch does not switch	See Heating Level Switch Does Not Switch On, 050 3.1
		Voltage (6VDC) from the electronic not present. The heating level switch controls the heater relay voltage.	Check plug connections.
			Check electronic module output voltage; see 070 Fig. 5, Pos. 9.

Fault code	Symptom	Cause	Remedy
<b>F02</b>	Wash water temperature T2 in wash block NS2 not reached within 60 minutes	Temperature limiter F2 has cut out	Reset temperature limiter F2. See Resetting Temperature Limiter F2 (Thermostat), 030 4.2. If necessary, replace the temperature limiter. See Replacing Temperature Limiter F2 (Thermostat), 030 4.3.
		Heater elements do not heat up	Check heater elements. If necessary, replace a faulty heater element; see Heater Element Replacement, 030 4.5..
		Heating level switch does not switch	See Heating Level Switch Does Not Switch On, 050 3.1
		Voltage (6VDC) from the electronic not present. The heating level switch controls the heating relay voltage.	Check plug connections. Check electronic module output voltage; see 070 Fig. 5, Pos. 9.
<b>F03</b>	Wash water temperature T3 in wash block CH-DESIN not reached within 60 minutes	Temperature limiter F2 has cut out	Reset temperature limiter F2. See Resetting Temperature Limiter F2 (Thermostat), 030 4.2. If necessary, replace the temperature limiter. See Replacing Temperature Limiter F2 (Thermostat), 030 4.3.
		Heater elements do not heat up	Check heater elements. If necessary, replace a faulty heater element; see Heater Element Replacement, 030 4.5..
		Heater level switch does not switch	See Heating Level Switch Does Not Switch On, 050 3.1
		Voltage (6VDC) from the electronic not present. The heating level switch controls the heating relay voltage.	Check plug connections. Check electronic module output voltage; see 070 Fig. 5, Pos. 9.
<b>F04</b>		Water NTC sensor or its leads open-circuited	Check leads and plug connections. Replace leads, if necessary.
<b>F05</b>		Water NTC sensor or its leads short-circuited	Check leads and plug connections. Replace leads, if necessary.
<b>F06</b> (G 7882 CD and G 7883 CD only)		Air NTC sensor or its leads open-circuited	Check leads and plug connections. Replace leads, if necessary.
<b>F07</b> (G 7882 CD and G 7883 CD only)		Air NTC sensor or its leads short-circuited	Check leads and plug connections. Replace leads, if necessary.
<b>F08</b>	Speed sensor B3/9 does not provide any pulses through they are required (e.g., with gentle-start mechanism)	Speed sensor defective	See Speed Sensor B3/9 Check, 050 4.1.
			Check leads and plug connections.
			Check correct seating of speed sensors on circulation pump.
			Check voltage supply (5VDC), 070 Fig. 5, Pos. 7.
		Circulation pump blocked	Replace speed sensor, if necessary. See Circulation Pump Does Not Start, 050 3.3
<b>F09</b>	Line frequency not registered. Applies particularly to buildings with their own on-site power supply where there is insufficient filtering of high-frequency line power interference	Changeover from line power operation to operation with emergency power supply or on-site power supply	None.
		Unstable line frequency	Check the sine-wave oscillation of the line frequency. Carry out appropriate corrective measures to stabilize the line frequency.
<b>F10</b>		Failure of one or more optical selector switch LEDs	Replace electronic.

Fault code	Symptom	Cause	Remedy
<b>F11</b>	The additional module cannot be addressed via the I <sup>2</sup> C bus	Bus leads defective	Check the bus leads and plug connections. Replace electronic, if necessary.
		The fault code is displayed even after replacing an additional module.	Replace the control electronic. Also, check the connection cable for abrasions and short circuits, and replace if necessary. <sup>3)4)</sup>
<b>F12</b> (G 7882 CD and G 7883 CD only)	Drying temperature has not been reached (warning and fault indication).	Fan in drying unit (TA) defective.	See Drying Unit Fan and Heater Bank Inoperative, 096 3.1.
			See Drying Temperature Not Reached, 096 3.5.
			See Air From Drying Unit Is Not Warm, 096 3.4.
			See Drying Unit Fan Operates Too Slowly, 096 3.3.
			See Drying Unit Fan Does Not Start, 096 3.2.
<b>F13</b>	RS-232 serial interface cannot be addressed via the I <sup>2</sup> C bus	Electronic defective	Replace electronic.
<b>F14</b>	An impermissible power failure when a cleaning program was in operation	Circuit breaker has tripped	Check circuit breaker and repair any possible short circuits.
		A possible changeover from line power operation to operation with emergency power supply or own supply has taken too long	None.
<b>F17</b>		External electronic module TUE has registered that the desired temperature has been exceeded.	None.
<b>F18</b>	Wash water temperature T4 in wash block HR2 not reached within 1 hour	Temperature limiter F2 has cut out	Reset temperature limiter F2. See Resetting Temperature Limiter F2 (Thermostat), 030 4.2. If necessary, replace the temperature limiter. See Replacing Temperature Limiter F2 (Thermostat), 030 4.3.
		Heater elements do not heat up	Check heater elements. If necessary, replace a faulty heater element; see Heater Element Replacement, 030 4.5..
		Heating level switch does not switch	See Heating Level Switch Does Not Switch On, 050 3.1
		Voltage (6VDC) from the electronic not present (heating level switch controls the heating relay voltage).	Check plug connections.
			Check electronic module output voltage; see 070 Fig. 5, Pos. 9.
<b>F19</b>	Wash water temperature T5 in wash block NS1 not reached within 60 minutes	Temperature limiter F2 has cut out	Reset temperature limiter F2. See Resetting Temperature Limiter F2 (Thermostat), 030 4.2. If necessary, replace the temperature limiter. See Replacing Temperature Limiter F2 (Thermostat), 030 4.3.
		Heater elements do not heat up	Check heater elements. If necessary, replace a faulty heater element; see Heater Element Replacement, 030 4.5..
		Heating level switch does not switch	See Heating Level Switch Does Not Switch On, 050 3.1
		Voltage (6VDC) from the electronic not present (heating level switch controls the heating relay voltage).	Check plug connections.
			Check electronic module output voltage; see 070 Fig. 5, Pos. 9.

Fault code	Symptom	Cause	Remedy
F20		Water check NTC sensor or its leads short-circuited (monitoring processor)	Check leads and plug connections. Replace leads, if necessary.
F21		Water check NTC sensor or its leads open-circuited (monitoring processor)	Check leads and plug connections. Replace leads, if necessary.
F22		Temperature variation between the two NTC sensors too large	Check leads and plug connections. Replace leads, if necessary
		One of the NTC sensors has incorrect resistance	Compare resistance values of both NTC sensors. Replace an NTC sensor, if necessary.
		Objects in the cabinet could prevent the flow of wash water to a sensor	Rearrange wash load, if necessary.
F23	Softener reactivation program segment has been skipped	No reactivation salt in salt container. Salt LED has been ignored.	Refill the salt container with reactivation salt.
		Reed switch B8/2 (reactivation salt float switch) had not been activated even though sufficient salt is present	Check reed switch plate for correct seating.
			Check float switch in salt container for correct operation.
F24	Triac failure. Speed sensor provides pulses even though circulation pump is not activated.	Control module defective	Replace control module.
F25	Heating level switch has switched before a program has started	Check heating level switch switching points	Replace heating level switch, if necessary.
F26	Overflow float switch B8/3 has switched	Water present in drip pan	Check machine for leaks (hoses, seal, etc.). Check WPS valves.
		Float switch B8/3 has been pressed upwards by a warped drip pan or a foreign object.	Re-align the appliance. Straighten the drip pan.
		Upon inspection, no water was found in the drip pan. A defective seal (mat. no. 4745740) between the cabinet and the steam condenser can cause condensate to run down the back wall, underneath the cabinet and to the sump, up to the contacts of microswitch B8/3. This condensate will eventually cause a short circuit in the connection leads and activate fault code F 26. <b>Traces of condensate are to be identified only after complete inspection of the appliance.</b>	Replace the seal.



Fault code	Symptom	Cause	Remedy
<b>F27</b>	Desired temperature not reached in wash block VR, SP1, SP2, SP3, or SP4	Temperature limiter F2 has cut out	Reset temperature limiter F2. See Resetting Temperature Limiter F2 (Thermostat), 030 4.2. If necessary, replace the temperature limiter. See Replacing Temperature Limiter F2 (Thermostat), 030 4.3.
		Heater elements do not heat up	Check heater elements. If necessary, replace a faulty heater element; see Heater Element Replacement, 030 4.5..
		Heating level switch does not switch	See Heating Level Switch Does Not Switch On, 050 3.1
		Voltage (6VDC) from the electronic not present (heating level switch controls the heating relay voltage).	Check plug connections. Check electronic module output voltage; see 070 Fig. 5, Pos. 9.
<b>F31</b>		Dispensing relay control (EZQ 081) defective.	Check the power supply; see 080 Fig. 2.
			Remove plug 1 from the EZQ 081 module and add a zero jumper (see 080 Fig. 2).
			Deactivate the dispensing relay control; see 070 2.9.6 <b>S 26</b> , Special Functions.
		Now run the dispensing pump to see if the EZQ 081 module works.	
		Dispensing relay control (EZQ 081) not accessible via the Novotronic.	Check the I <sup>2</sup> C bus plug (080 Fig. 2) for a contact error or broken lead.
<b>F32</b>		Defective or no activation of the dispensing relay in the Novotronic.	Remove plug 1 from the EZQ 081 module and add a zero jumper (see 080 Fig. 2).
			Deactivate the dispensing relay control; see 070 2.9.6 <b>S 26</b> , Special Functions.
			If the dispensing pump still does not run and other faults can be eliminated, replace the electronic module.
<b>F33</b>		EZQ 081 has registered an exceedance in the maximum allowable activation time (7 minutes) of a dispensing relay.	Check for a stuck dispensing relay in the Novotronic.
			Replace the electronic module, if necessary.
<b>F –</b>		Undefined fault in electronic	Turn the program selector switch to "Stop" (12 o'clock position).
			Shut the appliance off; turn it on again after a few seconds.
			If fault code "F- -" is still displayed after making a program selection, then replace the electronic.
<b>S F1 (warning code)</b>		Coarse filter warning.	See Coarse Filter Replacement, 095 4.1.

Fault code	Symptom	Cause	Remedy
<b>S F2 (warning code)</b>		Fine filter warning.	See Microfine Filter Replacement, 095 4.4.
<b>Water drain fault</b>	Water drainage fault approximately 20 s after start of water intake step	The water drainage check, 20 s after the start of the water intake step, is carried out by checking the heater pressure monitor (HDW). With a high water supply pressure and a high opening tolerance of the inlet valves, too much water may flow into the machine. The heater pressure monitor switches too early.	From machine no. 18131352 a different heater pressure monitor (2400/700) has been installed. Replace the existing heater pressure monitor (1500/700) with the new heater pressure monitor.

**Table 51:** Fault Codes

- <sup>1)</sup> This is actually not a fault, but rather an indication of an empty dispensing system. Program selection is blocked. Program start with a positive fill level indication is not allowed. A float switch for flow control (B8) was not installed in the G 7881 to G 7883 series machines.
- <sup>2)</sup> The "Container DOS1 Fill Level" and "Check Flow Meter" sensors are switched in parallel electrically. Depending on the program sequence, is the input signal for the "Fill DOS Container" message (before program start) or as flow meter check (during a drain program) from the electronic module interpreted. When ventilating the dispensing system the sensor of the dispenser check gives a signal to the electronic as soon as liquid media flows through the flow meter check. Depending on the viscosity of the medium, there will be a period of time until the float in the sensor of the flow meter check has fallen again and the signal to the electronic has again shut off. During this interval the above-mentioned message can register. In normal operation, no fault should occur, except when using viscous media.
- <sup>3)</sup> Abrasions between neighboring leads/contacts on the connection cable to the additional components can cause short circuits. A short circuit can lead to disturbances in the communication port in the control electronic's microcontroller.
- <sup>4)</sup> If the connection cable to the additional modules must be removed during service work, after this work is completed ensure that the electronic module is potential-free and that the appropriate connector to the EGPL 0xx, additional module or printer interface EZI is removed with an insulated tool.

## Remedy

✂ Refer to the respective fault.


## 4 Service

### 4.1 Programming Mode Summary

#### Initial requirements

- ✎ Close the door and shut off the machine.
- ✎ Turn the program selector switch to the 12 o'clock setting.

#### Accessing


- ✎ Press and hold the top **min °C** and bottom  program function buttons together.
- ✎ Turn on the machine and release the buttons.

#### Acknowledgement indicator


The display shows the current software index, e.g., **P 00**.

The **Intake/Drain** LED lights up.


If this is not the case, repeat the process.

An exception is the rinse aid  LED. If this lights up, rinse aid or an external disinfectant must be added to the appropriate dispenser.

#### Options


- ✎ Press the middle  program function button as necessary to advance to the desired programming level (**E 01 - E 34**).

For programming level descriptions, see 070 2.8 Programming Mode - Programming Levels **E 01** to **E 34**.


- ✎ When the desired programming level has been selected, turn the program selector switch to the program or function setting that is to be modified in accordance with the appropriate table.
- ✎ Press the top **min °C** program function button as necessary to page through the available options.
- ✎ Turn the program selector switch to the 12 o'clock setting to save the selected option.
- ✎ If appropriate, press the  button again as necessary to advance to the desired programming level and make other modifications as required.

The previously made modifications remain applicable. If a dash — is shown in the display, the program position is vacant or the appropriate component is not activated, not present or its parameters cannot be modified.

**Note**

Parameters or functions can **only** be modified via the top **min °C** program function button. The programming level is **only** displayed when the program selector switch is turned to the 12 o'clock setting. If the  button is pressed, the electronic advances immediately to the next programming level **without** the appropriate display.

**Save and quit**

- ✂ Press the  button twice.
- ✂ Shut off the machine.

**Note**


Each individual setting modification does not have to be saved separately. After all desired modifications have been made, they can be saved together.

## 4.2 Service Mode 1 Summary

**Initial requirements**

- ✂ Close the door and shut off the machine.
- ✂ Turn the program selector switch to the 12 o'clock setting.

**Accessing**


- ✂ Press and hold the **min °C** and  buttons together.
- ✂ Turn on the machine and release the buttons.

**Acknowledgement indicator**



The digital display shows the current status **S10** for service mode 1.

The **Intake/Drain** LED lights up.

If this is not the case, repeat the accessing process.

An exception is the rinse aid  LED. If this lights up, rinse aid or an external disinfectant must be added to the appropriate dispenser.

## Options

Program	Program Selector Switch Setting	Program Function Button	Digital Display
Switching step check	Select a program	—	First wash temperature
	—	Press  to advance switching step	Switching step
Test program	8 o'clock	Press  to start program	First wash temperature

**Table 52:** Service Mode 1 Summary

### Quit (without saving)

- ✎ Turn the program selector switch to the 12 o'clock setting.
- ✎ Shut off the machine.

## 4.3 Service Mode 2 Summary

### Initial requirements

- ✎ Close the door and shut off the machine.
- ✎ Turn the program selector switch to the 12 o'clock setting.

### Accessing

- ✎ Press and hold the  and  buttons together.

#### Note

If the programming mode is blocked, access to service mode 2 is made more difficult. In this case both program function buttons must be pressed and held together for approximately 2 seconds.


- ✎ Turn on the machine and release the buttons.

### Acknowledgement indicator


The display shows the current software index, e.g., **P 00**.

The **Intake/Drain** LED lights up.


If this is not the case, repeat the accessing process.

An exception is the rinse aid  LED. If this lights up, rinse aid or an external disinfectant must be added to the appropriate dispenser.

## Options


- ✎ Press the  button as necessary to advance to the desired service level (**S 21** - **S 27**).

For service mode 2 details, see 070 2.9 Service Mode 2 - Service Levels **S 21** to **S 27**.


- ✎ Turn the program selector switch to the desired function setting.
- ✎ Press the **min°C** button as necessary to page through the available options.
- ✎ Turn the program selector switch to the 12 o'clock setting to save the selected option.
- ✎ If required, press the  button again as necessary to advance to the desired programming level and make other modifications as desired.

The previously made modifications remain applicable. If a dash — is shown in the digital display, the program position is vacant or the appropriate component is not activated, not present or its parameters cannot be modified.

### Note

Parameters or functions can **only** be modified via the **min°C** button. The programming level is **only** displayed when the program selector switch is turned to the 12 o'clock setting. If  is pressed, the electronic advances immediately to the next programming level **without** the appropriate display.

## Save and quit

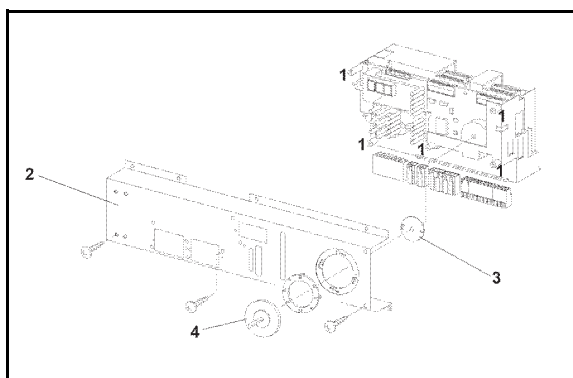
- ✎ Press the  button twice.
- ✎ Shut off the machine.

### Note

Each individual setting modification does not have to be saved separately. After all desired modifications have been made, they can be saved together.

## 4.4 Electronic Module EPGL 081 Removal

- ✂ Pull off the switch knob. See 070 Fig. 14, Pos. 4.
- ✂ Remove the 6 screws securing the fascia panel to the door inner panel (4 across the top and 1 on each side).
- ✂ Remove the fascia panel with electronic.
- ✂ Remove the 6 screws securing the mounting bracket to the fascia panel. Remove the mounting bracket from the fascia panel. See 070 Fig. 14, Pos. 2.
- ✂ Remove the 5 screws securing the electronic to the mounting bracket; see 070 Fig. 14, Pos. 1. Remove the electronic from the mounting bracket.
- ✂ Disconnect the plug connections (coded) from the electronic.



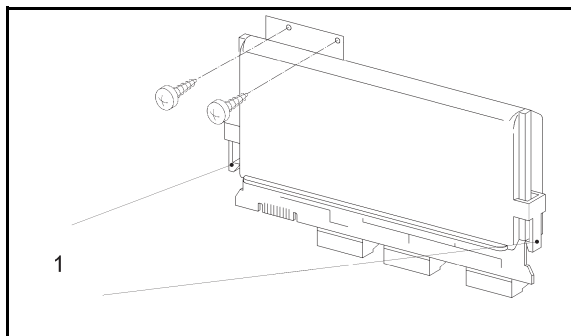
**Fig. 14:** EGPL 081 with Retaining Bracket

### Note

When re-installing, ensure that the selector disk of the program selector switch correctly engages with the coupling disk on the electronic.

## 4.5 Electronic Module EZL 081 Removal

- ✚ Service Panel Removal, 022 4.2.
- ✚ Toekick Removal, 010 4.6.
- ✚ Remove the 2 top screws securing the electronic. See 070 Fig. 15. Remove the electronic.
- ✚ Slightly bend the retaining clips outward and remove the circuit board. See 070 Fig. 15, Pos. 1.



**Fig. 15: EZL 081 Removal**

## 4.6 Fuse Removal

- ✚ Pull off the switch knob.
- ✚ Remove the 6 screws securing the fascia panel to the door inner panel (4 across the top and 1 on each side).
- ✚ Unscrew the fuse cap and pull out the fuse.



## 072 Fascia Panel, Electronic

G 7882 CD, G 7883 CD

## 2 Function

### 2.1 Program Summaries

#### 2.1.1 Program Summary (P 06) - G 7882 CD

Program Block	G 7882 CD Wash Programs <sup>1)</sup>			
	SPECIAL 93°C-10 min	SPECIAL AN 93°C-10 min	vario TD	vario TD AN
VR 1	[—]	[—]	[10 L cold water]	—
			[1 min]	
			[60 s drainage]	
VR 2	[—]	[—]	—	[15.5 L cold water]
				[1 min]
				[90 s drainage]
HR 1	[10.5 L cold water]	[16 L cold water]	10.5 L cold water	16 L cold water
	[DOS 1 / 40°C]	[DOS 1 / 40°C]	DOS 1 / 40°C	DOS 1 / 40°C
	[93°C / 10 min]	[93°C / 10 min]	55°C / 5 min	55°C / 5 min
	[60 s drainage]	[90 s drainage]	60 s drainage	90 s drainage
HR 2	[—]	[—]	—	—
CH-DESIN	[—]	[—]	[—]	[—]
SP 1	—	—	—	—
SP 2	[9 L cold water]	[14.5 L cold water]	9 L cold water	14.5 L cold water
	[DOS 3 immediately]	[DOS 3 immediately]	DOS 3 immediately	DOS 3 immediately
	[1 min]	[1 min]	1 min	1 min
	[60 s drainage]	[90 s drainage]	60 s drainage	90 s drainage
SP 3	5 L cold water	—	5 L cold water	10.5 L cold water
	1 min		1 min	1 min
	60 s drainage		60 s drainage	90 s drainage
SP 4	—	—	—	—
NS 1	[—]	[—]	—	—
NS 2	[9.5 L demineralized water]	[15 L demineralized water]	9.5 L demineralized water	15 L demineralized water
	[75°C / 3 min]	[75°C / 3 min]	93°C / 5 min	83°C / 10 min
	[60 s drainage]	[90 s drainage]	60 s drainage	90 s drainage
TA 1	—	99°C / 10 min	—	99°C / 10 min
TA1 / TA2	99°C / 35 min	90°C / 35 min	99°C / 35 min	90°C / 35 min

**Table 1:** Program Summary G 7882 CD (P 06), Part 1

<sup>1)</sup> The program blocks that appear in bold within the square brackets are fixed and cannot be activated or deactivated, except for the type of water intake. This can be changed in a wash block that cannot be deactivated. Individual values in "[[ ... ]]" can also not be modified.

Program Block	G 7882 CD Wash Programs <sup>1)</sup>				
	CHEM 60°C-5 min	combi CHEM 60°C-5 min	A (frei)	vario TD NR	UNIVERSAL
VR 1	—	—	—	10 L cold water	[10 L cold water]
				1 min	[1 min]
				60 s drainage	[60 s drainage]
VR 2	[10 L cold water]	[10 L cold water]	—	—	—
	[1 min]	[1 min]			
	[60 s drainage]	[60 s drainage]			
HR 1	[10.5 L cold water]	[10.5 L cold water]	—	—	10.5 L cold water
	[DOS 1 / 40°C]	[DOS 1 / 40°C]			DOS 1 / 40°C
	[60°C / 3 min]	[55°C / 3 min]			60°C / 3 min
	[60 s drainage]	[—]			60 s drainage
HR 2	[—]	[—]	—	10.5 L cold water	—
				DOS 1 / 40°C	
				55°C / 5 min	
				60 s drainage	
CH-DESIN	[10.5 L cold water]	[[—]]	—	—	[—]
	[DOS 4 immediately]	[DOS 4 immediately]			
	[60°C / 5 min]	[60°C / 5 min]			
	[60 s drainage]	[60 s drainage]			
SP 1	—	—	—	—	—
SP 2	—	—	—	—	—
SP 3	—	—	—	5 L cold water	—
				1 min	
				60 s drainage	
SP 4	9 L cold water	9 L cold water	—	9 L cold water	9 L cold water
	1 min	1 min		1 min	1 min
	60 s drainage	60 s drainage		60 s drainage	60 s drainage
NS 1	—	—	—	—	—
NS 2	9.5 L demineralized water	9.5 L demineralized water	—	9.5 L demineralized water	9.5 L demineralized water
	60°C / 3 min	60°C / 3 min		93°C / 5 min	65°C / 1 min
	60 s drainage	60 s drainage		60 s drainage	60 s drainage
TA 1	80°C / 5 min	80°C / 5 min	—	—	80°C / 5 min
TA1 / TA2	60°C / 40 min	60°C / 40 min	—	99°C / 35 min	65°C / 25 min

**Table 2:** Program Summary G 7882 CD (P 06), Part 2

<sup>1)</sup> The program blocks that appear in bold within the square brackets are fixed and cannot be activated or deactivated, except for the type of water intake. This can be changed in a wash block that cannot be deactivated. Individual values in "[[ ... ]]" can also not be modified.

## 2.1.2 Program Summary (P 06) - G 7883 CD

Program Block	G 7883 CD Wash Programs <sup>1)</sup>			
	SPECIAL 93°C-10 min	vario TD	Customer	Anorganica
VR 1	[—]	[10 L cold water]	10 L cold water	—
		[1 min]	1 min	
		[60 s drainage]	60 s drainage	

Program Block	G 7883 CD Wash Programs <sup>1)</sup>			
	SPECIAL 93°C-10 min	vario TD	Customer	Anorganica
VR 2	[—]	—	—	10 L cold water
				DOS 3 immediately
				50°C / [[1]] min
				60 s drainage
HR 1	[10.5 L cold water]	10.5 L cold water	—	—
	[DOS 1 / 40°C]	DOS 1 / 40°C		
	[[93°C / 10 min]]	55°C / 5 min		
	[60 s drainage]	60 s drainage		
HR 2	[—]	—	10.5 L hot water	10.5 L hot water
			DOS 1 / 40°C	DOS 1 / 40°C
			80°C / 3 min	75°C / 3 min
			60 s drainage	60 s drainage
CH-DESIN	[—]	[—]	—	—
SP 1	—	—	—	—
SP 2	[9 L hot water]	9 L hot water	9 L hot water	9 L hot water
	[DOS 3 immediately]	DOS 3 immediately	DOS 3 immediately	DOS 3 immediately
	[1 min]	1 min	1 min	1 min
	[60 s drainage]	60 s drainage	60 s drainage	60 s drainage
SP 3	5 L hot water	5 L hot water	5 L hot water	5 L demineralized water
	1 min	1 min	1 min	1 min
	60 s drainage	60 s drainage	60 s drainage	60 s drainage
SP 4	—	—	9 L demineralized water	9 L demineralized water
			1 min	1 min
			60 s drainage	60 s drainage
NS 1	[—]	—	—	—
NS 2	[9.5 L demineralized water]	9.5 L demineralized water	9.5 L demineralized water	9.5 L demineralized water
	[75°C / 3 min]	93°C / 5 min	75°C / 1 min	70°C / 1 min
	[60 s drainage]	60 s drainage	60 s drainage	60 s drainage
TA 1	—	—	99°C / 25 min	99°C / 25 min
TA1 / TA2	99°C / 35 min	99°C / 35 min	70°C / 5 min	70°C / 5 min

**Table 3:** Program Summary G 7883 CD (P 06), Part 1

<sup>1)</sup> The program blocks that appear in bold within the square brackets are fixed and cannot be activated or deactivated, except for the type of water intake. This can be changed in a wash block that cannot be deactivated. Individual values in "[[ ... ]]" can also not be modified.

Program Block	G 7883 CD Wash Programs <sup>1)</sup>				
	Organica	Standard	Universal	Intensive	Plastic
VR 1	—	—	10 L cold water	10 L cold water	10 L cold water
			1 min	1 min	1 min
			60 s drainage	60 s drainage	60 s drainage
VR 2	—	—	—	—	—
HR 1	10.5 L hot water	—	—	—	—
	DOS 1 / 40°C				
	65°C / 3 min				
	60 s drainage				

Program Block	G 7883 CD Wash Programs <sup>1)</sup>				
	Organica	Standard	Universal	Intensive	Plastic
HR 2	10.5 L hot water	[10.5 L hot water]	[10.5 L hot water]	10.5 L hot water	10.5 L cold water
	DOS 1 / 40°C	[DOS 1 / 40°C]	[DOS 1 / 40°C]	DOS 1 / 40°C	DOS 1 / 40°C
	85°C / 3 min	[75°C / 3 min]	[80°C / 3 min]	85°C / 3 min	55°C / 5 min
	60 s drainage	[60 s drainage]	[60 s drainage]	60 s drainage	60 s drainage
CH-DESIN	—	[—]	[—]	[—]	[—]
SP 1	—	—	—	—	—
SP 2	9 L hot water	9 L hot water	9 L hot water	9 L hot water	9 L cold water
	DOS 3 immediately	DOS 3 immediately	DOS 3 immediately	DOS 3 immediately	DOS 3 immediately
	1 min	1 min	1 min	1 min	1 min
	60 s drainage	60 s drainage	60 s drainage	60 s drainage	60 s drainage
SP 3	5 L hot water	—	5 L hot water	—	5 L cold water
	1 min		1 min		1 min
	60 s drainage		60 s drainage		60 s drainage
SP 4	9 L demineralized water	9 L demineralized water	9 L demineralized water	9 L demineralized water	9 L cold water
	1 min	1 min	1 min	1 min	1 min
	60 s drainage	60 s drainage	60 s drainage	60 s drainage	60 s drainage
NS 1	—	—	—	9.5 L demineralized water	9.5 L demineralized water
				0°C / 1 min	55°C / 1 min
				60 s drainage	60 s drainage
NS 2	9.5 L demineralized water	[9.5 L demineralized water]	9.5 L demineralized water	9.5 L demineralized water	—
	80°C / 1 min	[75°C / 1 min]	75°C / 1 min	80°C / 1 min	
	60 s drainage	[60 s drainage]	60 s drainage	60 s drainage	
TA 1	99°C / 25 min	99°C / 25 min	99°C / 25 min	99°C / 25 min	65°C / 5 min
TA1 / TA2	70°C / 5 min	70°C / 5 min	70°C / 5 min	70°C / 5 min	55°C / 35 min

**Table 4:** Program Summary G 7883 CD (P 06), Part 2

<sup>1)</sup> The program blocks that appear in bold within the square brackets are fixed and cannot be activated or deactivated, except for the type of water intake. This can be changed in a wash block that cannot be deactivated. Individual values in "[[ ... ]]" can also not be modified.

## **2.2 Program Sequence Plans - EGPL 081**

For program sequence plans for G 7882 CD and G 7883 CD, see 070 2.7 Software Index Versions, Program Sequence Plans.

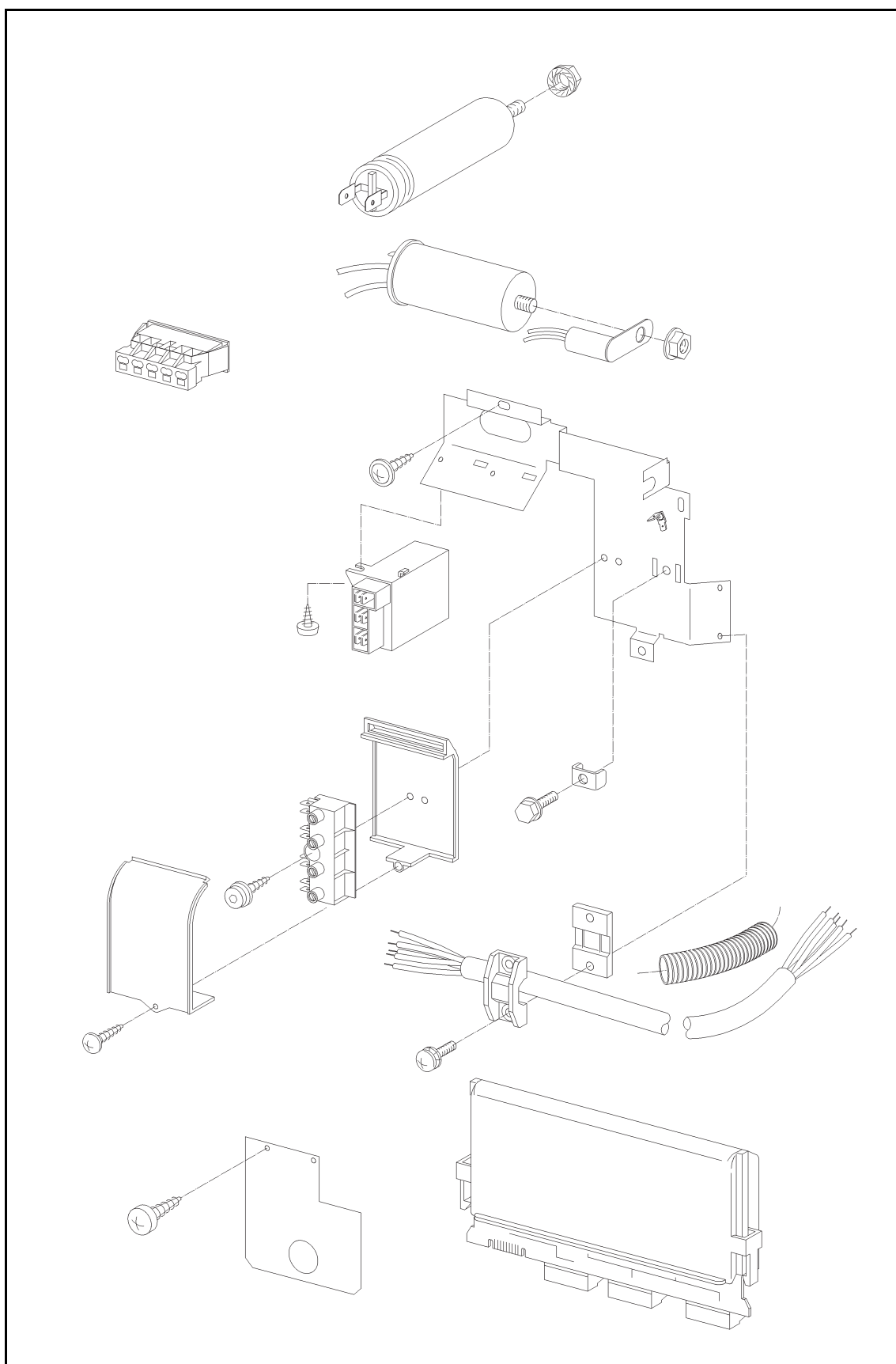
## **2.3 Programming Mode - Programming Levels E 01 to E 34 (Programming Mode)**

See 070 2.8 Programming Mode - Programming Levels **E 01** to **E 34**.

## **2.4 Service Mode 2 - Service Levels S 21 to S 27**

See 070 2.9 Service Mode 2 - Service Levels **S 21** to **S 27**.

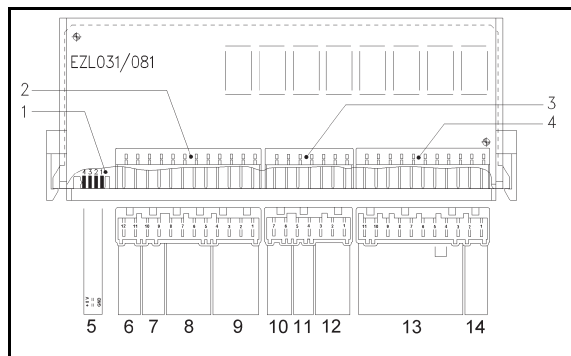
## 080 Electrical Installations



## 2 Function

### 2.1 Electronic (2N1) Plug Allocation

#### 2.1.1 Electronic EZL (031) 081



**Fig. 1:** Electronic EZL (031) 081 Plug Allocation

- |   |  |
|---|--|
| 1 | Plug connection ST 4 - I <sup>2</sup> C bus (internal interface)                 |
| 2 | Plug connection ST 3 - One output with supply voltage and two inputs (digital)   |
| 3 | Plug connection ST 2 - Four outputs with supply voltage                          |
| 4 | Plug connection ST 1 - Three outputs with supply voltage and one input (digital) |

#### 2.1.2 Terminal Allocation of Individual Plugs on Electronic EZL (031) 081

Individual plugs (see 080 Fig. 1, Pos. 5-14) may be vacant or missing depending on model.

##### **Plug 5** (I<sup>2</sup>C, internal interface)

- Contact 4, +8V
- Contact 1, GND

##### **Plug 6** (level switch 2B1/7, level indicator for external detergent container)

The leads are connected to the DOS module dispenser (DOS 4) connections on the rear of the machine, D Layout of Electrical Components 1.

- Contact 12, GND
- Contact 11, DOS 4 (2B1/7)

##### **Plug 7**

- Contact 10, XOR - Signal
- Contact 9, GND

##### **Plug 8**

- Contact 8, AD (demineralized water) - GND
- Contact 7, AD (demineralized water) - Signal
- Contact 6, KW (cold water) - Signal
- Contact 5, KW (cold water) - GND

**Plug 9**

- Contact 4, WW (hot water) - GND
- Contact 3, DK WW (steam condenser hot water) - Signal
- Contact 2, condensate pump (M13)
- Contact 1, N

**Plug 10** (solenoid valve, steam condenser, cold)

- Contact 7, solenoid valve 1Y22
- Contact 6, GND

**Plug 11** (solenoid valve, steam condenser, cold)

- Contact 5, solenoid valve 2Y22
- Contact 4, GND

**Plug 12** (CD models only)

- Contact 3, TA EIN (drying unit on)
- Contact 2, TA Reg. (drying unit heating, heater bank control load)
- Contact 1, N

**Plug 13**

- Contact 11, TA GL, (drying unit heating, heater bank base load (for CD models))
- Contact 10, N
- Contact 9, GND
- Contact 8, float switch, acidic agent (B8/6), DOS 3
- Contact 7, dispenser pump, acidic agent (M9/3), DOS 3
- Contact 6, N
- Contact 5, N
- Contact 4, N
- Contact 3, L1, voltage supply for EZL additional module via main switch S2 and door contact switch 1S4

**Plug 14** (external dispenser pump)



The leads are connected to the DOS module dispenser (DOS 4) connections on the back of the machine, D Layout of Electrical Components 1.

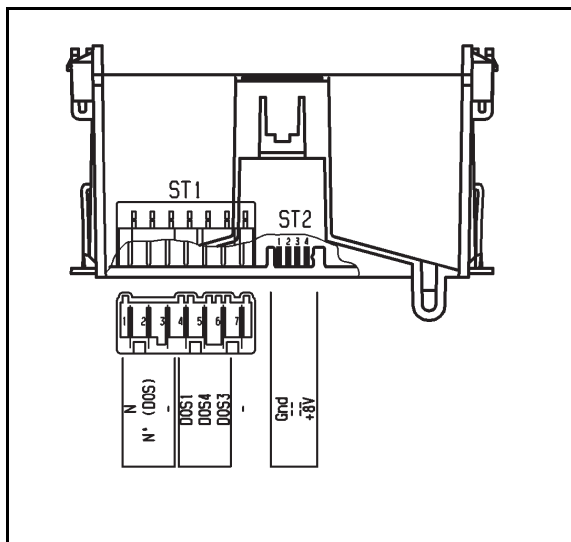
- Contact 2, M9/7, DOS 4
- Contact 1, N

## 2.2 Dispensing Monitor EZQ 081

### 2.2.1 EZQ 081 Function

Auxiliary electronic EZQ 081 (dispenser relay check) **interrupts the neutral conductor of the voltage supply** to all dispensing systems if the maximum dispensing time of 7 minutes has been exceeded by one dispensing system.

### 2.2.2 Plug Allocation EZQ 081



**Fig. 2:** EZQ 081 Electronic

#### Connector ST 1

- Contact 1 – Neutral conductor
- Contact 2 – Neutral conductor DOS
- Contact 3 – Neutral conductor DOS
- Contact 4 – Neutral conductor DOS
- Contact 5 – DOS 1
- Contact 6 – DOS 4
- Contact 7 – DOS 3

#### Connector ST 2 (I<sup>2</sup>C, internal interface)

- Contact 1 – GND
- Contact 2 – Data link to I<sup>2</sup>C bus
- Contact 3 – Data link to I<sup>2</sup>C bus
- Contact 4 – (+) 8VDC

## 2.3 Wiring Diagram and Legend

### 2.3.1 Wiring Diagrams

#### G 7881

The following wiring diagrams are applicable for the G 7881.

Diagram no.	Description
05746271	Without dispensing check or EZQ 081 (dispensing relay check) module.
06000381	Without dispensing check or EZQ 081 (dispensing relay check) module. New wiring for solenoids Y20 and Y1 (demineralized and cold water intakes).
06869610	With dispensing check (B8).
07061880	With dispensing check, module 4N1, and dispensing relay check module EZQ 081.

**Table 1:** G 7881 Wiring Diagrams

### 2.3.2 Wiring Diagram Legend

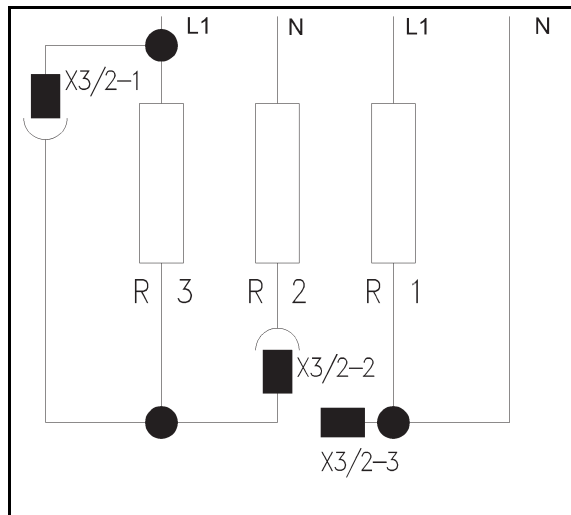
Component	Description
B1/1	Water intake level switch
B1/7	Detergent dispenser level switch
B1/10	Heating level switch
1B3/4	Flow meter
2B3/4	Flow meter
B3/9	Speed sensor
B8	Float switch (dispensing check)
B8/1	Rinse aid dispenser float switch (reed switch)
B8/2	Reactivation salt float switch (reed switch)
B8/3	Overflow float switch
B8/6	Acidic acid float switch
C6	Circulation pump capacitor
EZQ 081	Dispensing relay check (G 7881 only)
F2	Temperature limiter (thermostat)
1F3	Circulation pump winding protection

2F3	Drain pump winding protection
F7	Fine-wire fuse
1K1/1	Heater relay (water/pulsed drying)
2K1/1	Heater relay (water only)
M6	Circulation pump
M8	Drain pump
M9/3	Acidic acid dispenser pump
M9/5	Detergent dispenser pump
M13	Condensate drain pump
1N1	Electronic
2N1	Electronic
3N1	Electronic
7N1	Electronic
8N1	Electronic
N2	Speed selector
R1	Heater element 1 (water + drying)
R2	Heater element 2 (water)
R3	Heater element 3 (water)
1R30	NTC temperature sensor (water)
2R30	NTC temperature sensor (water)
3R30	NTC temperature sensor (air) (G 7883 CD only)
S2	On/Off switch
1S4	Door switch (positioning)
2S4	Door switch (open door)
T1	Transformer
X1/2	Dispenser unit socket
X3/1	Main terminal block
X3/2	Heating terminal block
X5	Coupling
X5/2	Drying-unit coupling
Y1	Double solenoid valve (WPS) - cold-water intake
Y12	Double solenoid valve (WPS) - hot-water intake
Y20	Double solenoid valve (WPS) - demineralized water intake
Y38	Reactivation solenoid valve
Y50	Liquid dispenser
Y51	Powder dispenser
Y53	Door release magnet
Z1	Interference suppression filter

**Table 2: Wiring Diagram Legend**

## 2.4 Power Supply Connection Conversion Possibilities

These machines are supplied as standard for connection to 3 AC 208V 60Hz. Connection to one or two phases is possible but this results in a heating power reduction; see C Table 2. If a heater rating of 6kW is to be achieved with connection to a single phase, then the connection of the heater elements and power supply should be modified in accordance with the following diagram.



**Fig. 3:** Heating Connection (6kW) with 208VAC

### Warning!

Connection of the phase terminals is **only** permitted when in accordance with 080 Fig. 3. For details, see Heater Element Connection Conversion From 3 N AC 400 V To 230VAC, 080 4.1.

## 2.5 Heater Control, Heater Relays

Both heater relays, solenoid voltage 6VDC, are positioned together with the overflow level switch on a mounting bracket on the connecting strip, 010 Fig. 8, Pos. B. In cleaning stages both relays are operated but the second one is switched on approximately 100 milliseconds after the first. In the drying phase relay 1K1/1 only is operated with pulsed power. The neutral conductor of the star connection is also laid via this relay. For heating water the relays are only switched on after the heating level switch, 050 2.6.2 Heater Level Switch B1/10, has remained switched on for 2 seconds without a break.

## **3 Fault Repair**

### **3.1 No Voltage for Relay Solenoid 1K1/3 in Drying Unit (TA)**

G 7882 CD, G 7883 CD

#### **Cause**

No voltage between contacts 3 (TA on) and 1 (N) of plug 12 on ELZ 081 electronic.

#### **Remedy**

- ✂ Disconnect plug 12 and check output 16 via the service mode, 070 2.9.4 **S 24**, Checking Outputs 12 - 19.
- ✂ If no voltage is present, check the voltage supply for EZL 081 via main switch S2 and door contact switch 1S4 at plug 13, contact 3 (L1) and 4 (N).
- ✂ If voltage is present, replace the electronic; see Electronic Module EZL 081 Removal, 070 4.5.

### **3.2 Suds Warm Up Too Slowly/Wash Cycles Take Longer to Heat Water**

#### **Cause**

Heater element defective.

#### **Remedy**

- ✂ Check the heater elements for continuity; see Checking the Heater Element, 030 4.1.
- ✂ Replace the faulty heater element; see Heater Element Replacement, 030 4.5.

#### **Cause**

Heater relay 2K1/1 or 1K1/1 do not switch.

#### **Remedy**

- ✂ Check solenoid voltage (6VDC).
- ✂ Check plug connections.
- ✂ Check solenoid for continuity.
- ✂ Check contacts for continuity.

### 3.3 Load Does Not Dry

#### Cause

Heater relay 1K1/1 does not switch.

#### Remedy

- ↯ See also Suds Warm Up Too Slowly/Wash Cycles Take Longer to Heat Water, 080 3.2.

#### Cause

Heater element R1 defective.

#### Remedy

- ↯ Check heater element R1 for continuity; see Checking the Heater Element, 030 4.1.
- ↯ If necessary, replace the heater element; see Heater Element Replacement, 030 4.5.

## 4 Service

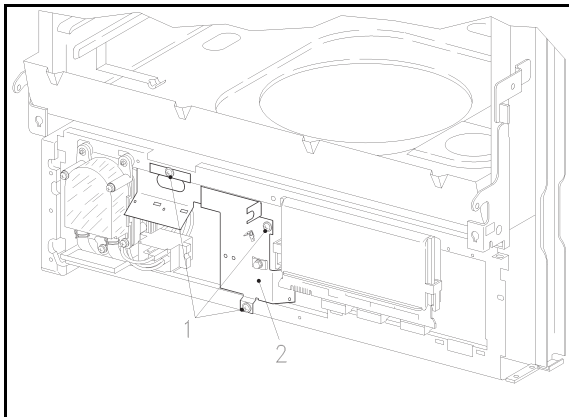
### 4.1 Heater Element Connection Conversion From 3 N AC 400 V To 230VAC

**Note**

German standard models only.

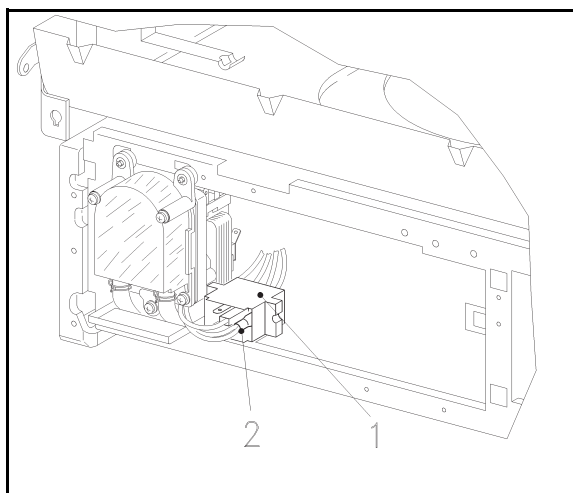
**Warning!**

With this connection variation, the connection lead must be at least  $3 \times 0.01 \text{ in.}^2$  ( $3 \times 4 \text{ mm}^2$ ). The fuse rating should be 30A.



**Fig. 4:** Holding Bracket

- ✂ Service Panel Removal, 022 4.2.
- ✂ Toekick Removal, 010 4.6.
- ✂ Remove the holding bracket (080 Fig. 4, Pos. 2) after removing the retaining screws (080 Fig. 4, Pos. 1).



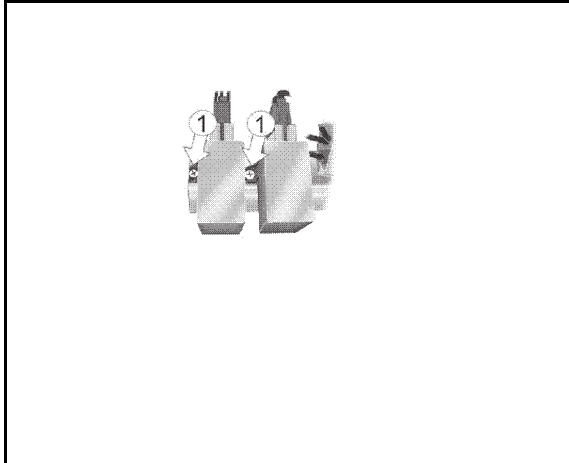
**Fig. 5: Star Point Plug of 3 Heater Elements**

- ✂ Pull off the right plug (neutral conductor) 080 Fig. 5, Pos. 2 from the star point 080 Fig. 5, Pos. 1 and connect it onto the vacant left plug contact.
- ✂ Re-install the holding bracket.
- ✂ At the main terminal block, disconnect the lead L2 plug and fit it onto the neutral conductor connection N. A vacant plug contact is directly behind the 2 plugs already installed there.
- ✂ At the main terminal block, disconnect the lead L3 plug and fit it onto the plug contact L1. A vacant plug contact is directly behind the 2 plugs already installed there.
- ✂ After the conversion, check the power consumption. The power consumption of the heater element circuit connected in accordance with 080 Fig. 3 must not greatly exceed 6 kilowatts.

## 4.2 Heater Relay Removal

- ✂ Service Panel Removal, 022 4.2.
- ✂ Toekick Removal, 010 4.6.
- ✂ Remove the 3 screws securing the retaining bracket (080 Fig. 4, Pos. 1 and 2).
- ✂ Remove the screws securing the appropriate relay (see 080 Fig. 6, Pos. 1). Slide the relay out of the mounting bracket to remove.



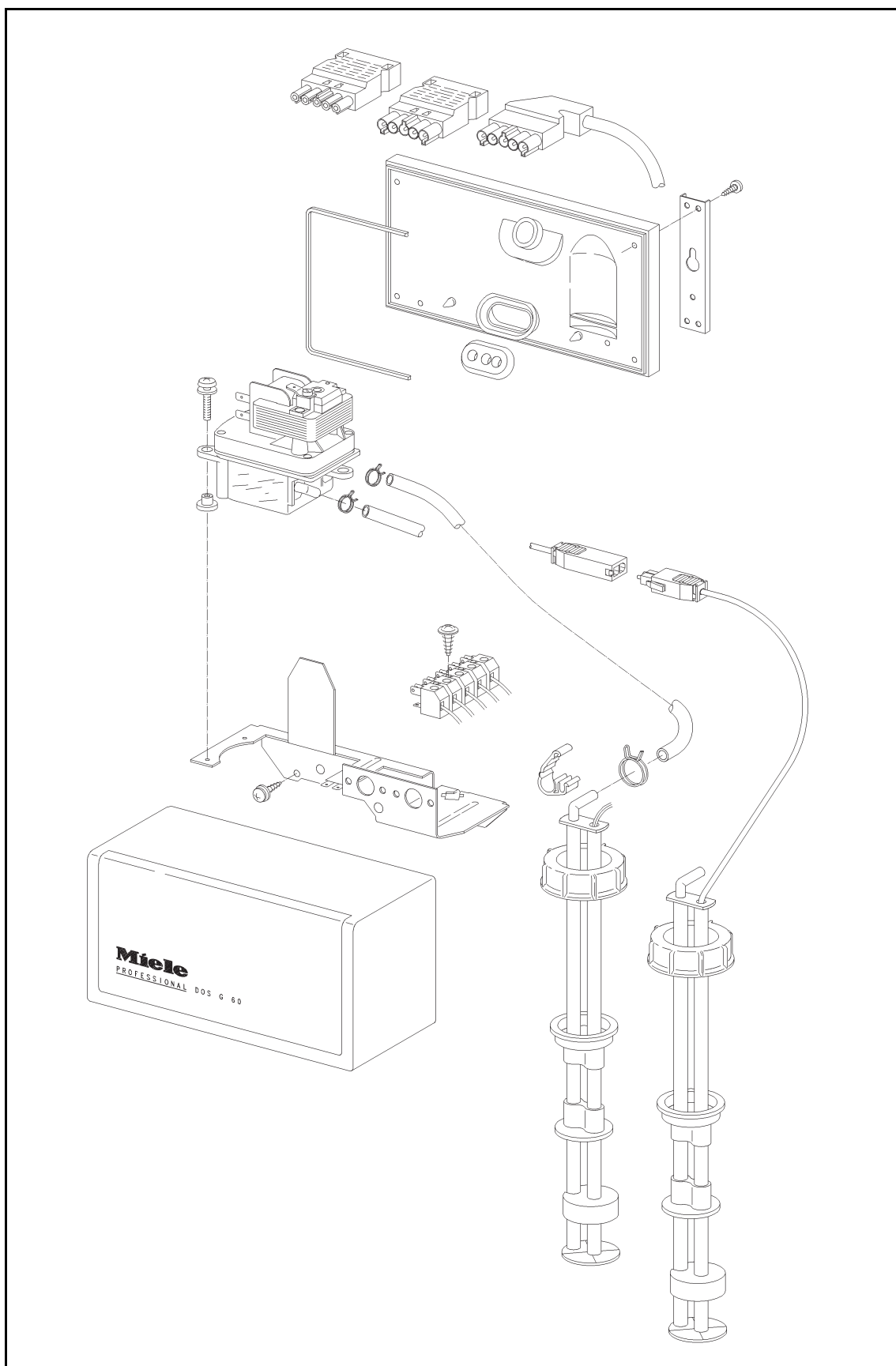


**Fig. 6:** Relay Screws

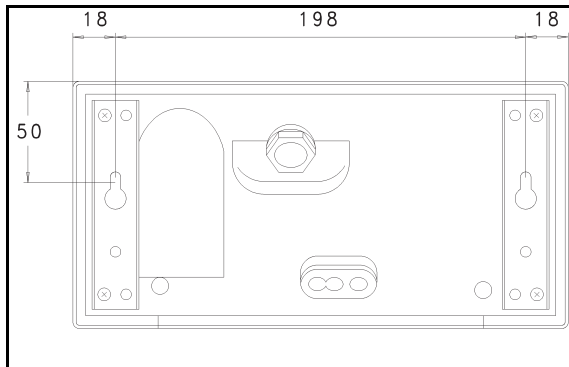
**Warning!**

Take care to connect relays correctly when re-installing!

## 091 DOS G 60 Dispenser Module



# 1 Technical Data



**Fig. 1: Drilling Dimensions (Millimeters) - DOS G 60 Dispenser Module**

DOS G 60 Dispenser Module	
Dimensions (L x W x H)	9.2" x 4.2" x 4.6" (234 x 107 x 118 mm)
Weight	5.1 lbs (2.3 kg)
Test certificate	Splash proof IP X1

**Table 1: Dimensions and Test Certificate**

Electrical Connection - USA Models Only	
Voltage	208/220 VAC 60Hz (dispenser pump)
Current consumption	Approx. 220mA (with activated dispenser pump)
Power rating	Approx. 50W (with activated dispenser pump)
Connection cable	5 x 0.01"² with 5-pin flat plug, 10' long

**Table 2: Electrical Connection - USA Models Only**

Dispenser Connection/Pump Capacity				
	Hose	Length	Internal Diamter	External Diameter
Suction side	Transpar-ent PVC	Approx. 6' (1850 mm)	0.2" (6 mm)	0.3" (8 mm)
Pressure side	Transpar-ent PVC	Approx. 7'9" (2350 mm)	0.2" (6 mm)	0.3" (8 mm)
Suction probe	Blue marking, approx. 13" (330 mm) long, for 5 L + 10 L containers. Double connection for level indicator and agent intake. Screw connection for container.			
Dispensed quantity (DOS 60 / 30)	Approx. 2 fl.oz. (60 mL) in 30 s			
Suction height	Approx. 6'7" (2000 mm)			

**Table 3: Dispenser Connection/Pump Capacity**

## 2 Function

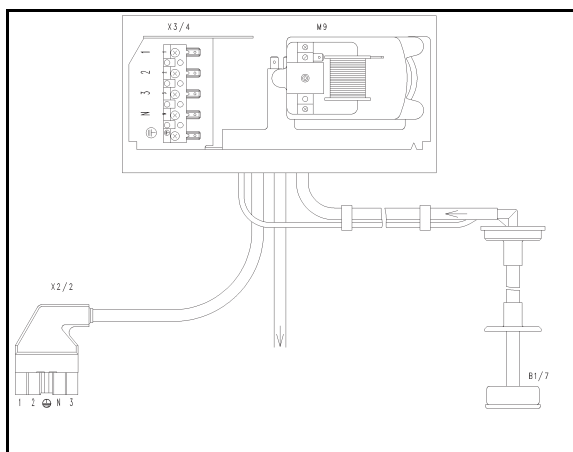
### 2.1 Color Coding for Different Agents

Standardized color coding for containers and hoses allows broad classification of agents whose exact components are unknown.

Color Coding		
Blue	Alkaline agents (e.g., detergent)	International coding
Red	Acidic agents	
Green	Chemical disinfectant	Miele internal coding
White	Neutral agents for various applications	

**Table 4:** Color Coding for Different Agents

### 2.2 Construction and Control of the DOS G 60 Dispenser Module



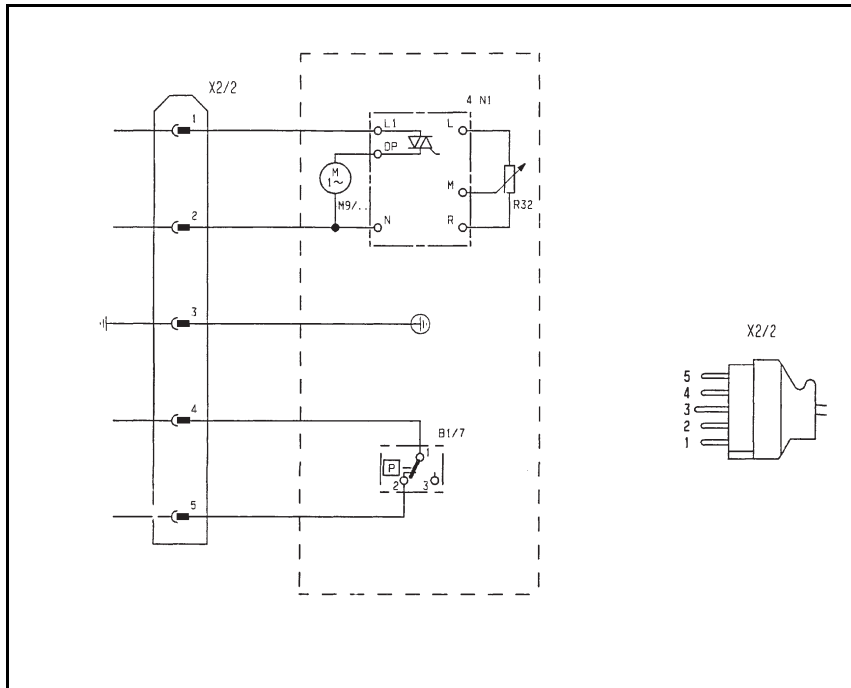
**Fig. 2:** DOS G 60 Dispenser Module Components

- X3/4 Terminal block
- M9/7 Dispenser pump motor
- B1/7 Level switch (reed switch)
- X2/2 5-pin flat plug for connection to washer-disinfector

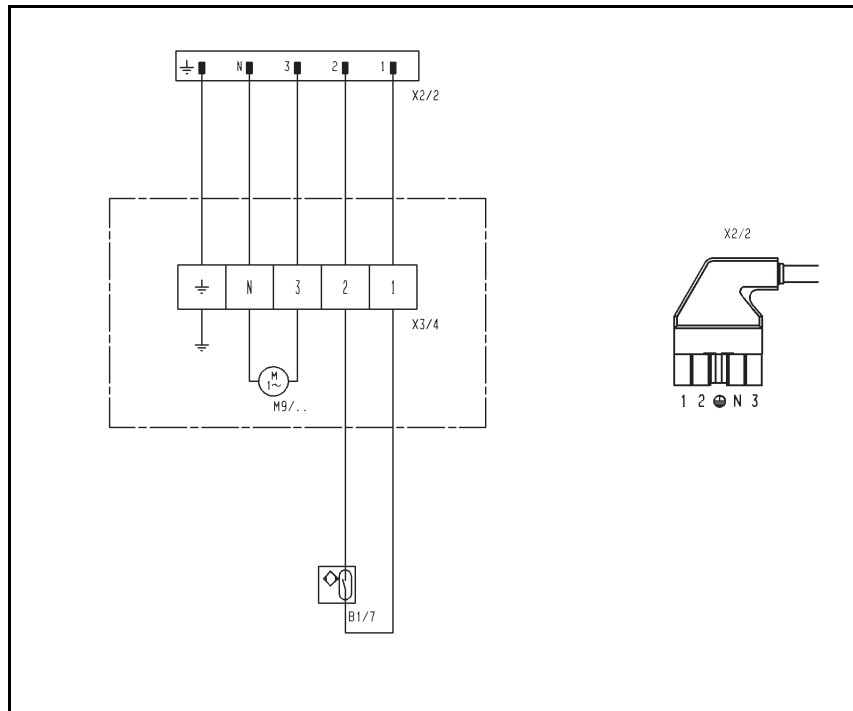
Programming of the dispenser pump (dispensing time) is carried out via the control of the machine to which the DOS dispenser module is connected as an external dispenser assembly (DOS 4). Manual setting of the dispensing time is not necessary. The indicator LED on the fascia panel is activated via reed switch B1/7 in the suction probe connected to the additional EZL electronic module, 080 Fig. 1, plug 6. Dispenser pump M9/7 in the DOS dispenser module is activated via 080 Fig. 1, plug 14.

The dispenser pump hoses are subject to severe wear and tear (aggressive agents) and should therefore be replaced at least once per year; see Replacing the Dispenser Pump Hose Complete With Pump Cap, 091 4.2. To suit the various agents in use several different hoses are available. A conversion kit contains a dispenser pump cap with a pre-installed hose.

### 2.3 Plug Assignments for the Different DOS Modules

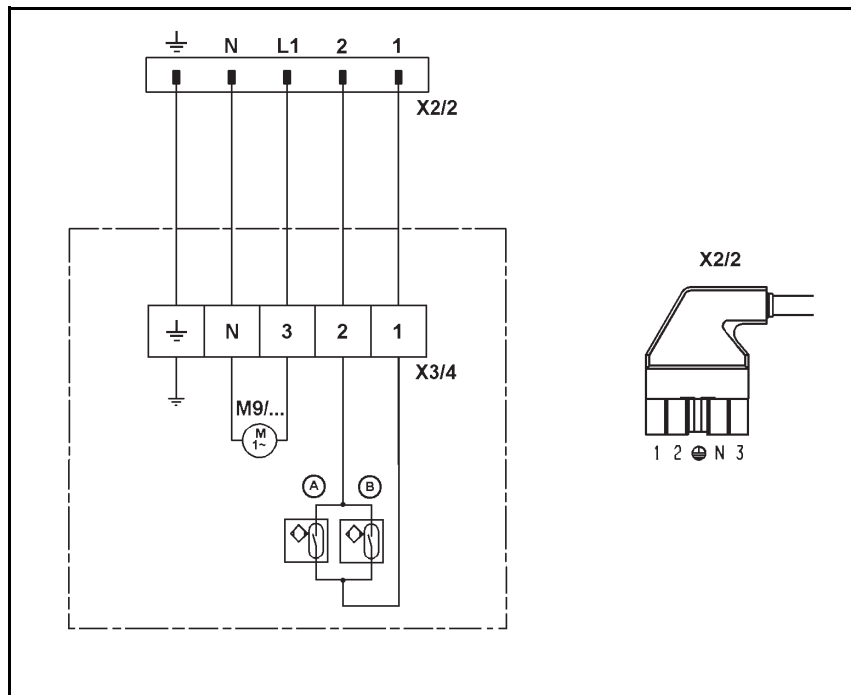


**Fig. 3:** Plug Connections for C-Series DOS Modules



**Fig. 4:** Plug Connections for G-Series DOS Modules

1	Black
2	Black
3	Brown
N	Blue



**Fig. 5:** Plug Connections for K-Series DOS Modules

- A Fill-level sensor, **open** for full dispensing containers!
- B Float switch (flow monitoring), **closed** for liquid media!

A spring-loaded float switch for flow monitoring was integrated into K-series DOS modules, in addition to G-series DOS modules. After flow, this spring pushes the piston of the float switch back into its initial position. It is switched in parallel to the fill-level sensor within the module housing and is therefore pin-compatible to the existing dispensing sockets on the washers and disinfectors.

In K 60 DOS modules, a float switch with a spring tensile strength of 0.1 pounds/ 0.4 newtons (for capacities between 40 and 200 milliliters) was incorporated. The housing of this float switch is blue.

## **3 Fault Repair**

### **3.1 Swelling of Hose Material**

#### **Cause**

To ensure that elastomers are treated as gently as possible, disinfecting, alkaline detergents with a high active chlorine content should not be used at temperatures above 176 °F/80 °C. In particular, liquid agents with tensides and disinfectants can lead to large variations in the volume capacity of dispenser pumps (usually due to swelling of the hose material).

#### **Remedy**

🔧 Replace the hoses.

#### **Note**

When a high cleaning standard depends on the dispensing of liquid disinfectant, the dispenser hose should be replaced approximately every year. If particularly exacting cleaning, final rinsing or disinfecting results are desired, then regular checks and quality controls should be carried out to ensure that the required standards are being maintained.

### **3.2 DOS G 60 Dispenser Module Does Not Supply Agent**

#### **Cause**

Dispenser pump inoperative.

#### **Remedy**

🔧 Check voltage supply; see No Voltage at DOS G 60 Dispenser Module, 091 3.3.

#### **Cause**

Air in dispenser hose.

#### **Remedy**

🔧 Ventilate the dispenser hose; see 070 2.8.2 **E 02**, Dispenser Settings.



**Note**

The pump is only being ventilated successfully when the air bubble in the hose advances continuously. If the air bubble falls or retreats during pumping breaks, a leak may exist in the system.

**Cause**

Leak in suction hose.

**Remedy**

- ✎ Check the hoses and connections for porous sections, leaks and correct positioning.

### 3.3 No Voltage at DOS G 60 Dispenser Module

**Cause**

Voltage supply interrupted or not present.

**Remedy**

- ✎ Check the programming. Ensure that the DOS dispenser module is activated.
- ✎ Check 5-pin plug for correct seating.
- ✎ Check leads for open circuits (ohmmeter).
- ✎ Check the voltage supply at ELZ electronic module, contact 2 (M9/7), 080 Fig. 1, plug 14.
- ✎ Check the voltage supply for ELZ electronic module, contact 3, 080 Fig. 1, plug 13.

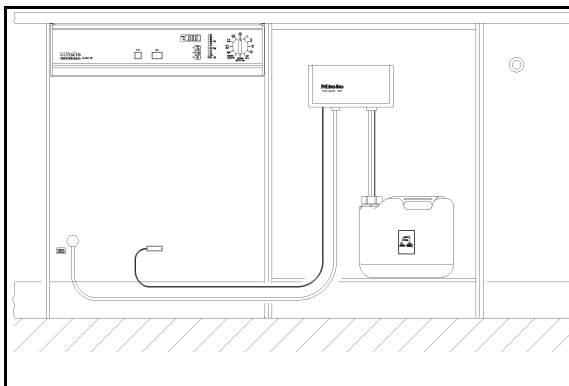
## 4 Service

### 4.1 Installation and Commissioning of DOS Dispenser Module

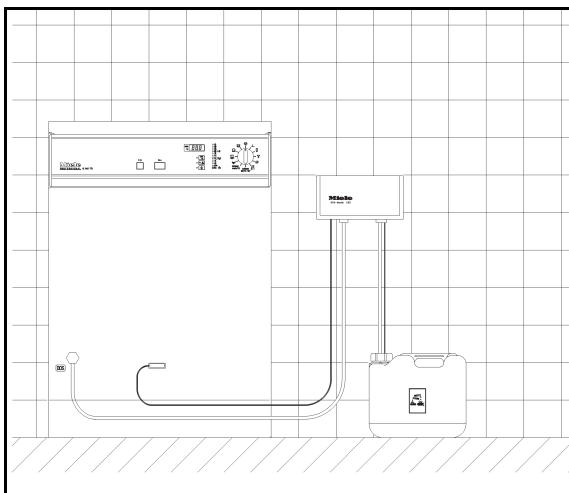
#### Warning!

Before shipping the dispensing module, the system functions were factory-tested with glycerin. In order to avoid faults or polluting the machine with glycerin residue, **always observe** the following steps.

- Remove all caps from the dispensing hoses and the DOS module.
- After connecting the hoses and installing the dispensing module, **thoroughly** flush the entire system with warm water.



**Fig. 6:** DOS G 60 Dispenser Module in Base Unit



**Fig. 7:** Wall-Mounted DOS G 60 Dispenser Module

- ✂ Insert the 5-pin connection plug in the appropriate socket (D Layout of Electrical Components 1, Pos. 5a or 5b) on the back of the machine.
- ✂ Install the transparent silicone hose onto a vacant connection stub (D Layout of Electrical Components 1, Pos. 9, 10 or 11) and secure it with a hose clip.

- ✂ Install the suction probe in the appropriate agent container and screw it tight.
- ✂ Ventilate the dispenser pump; see 070 2.8.2 **E 02**, Dispenser Settings.

**Note**

Any detergent residues in the cabinet after ventilation must be diluted and flushed out.

- ✂ Set the quantity to be dispensed **in accordance with the manufacturer's instructions**; see 070 2.9.2 **S 22**, Setting Printer Interface (RS-232) and Dispenser Pumps.

**Note**

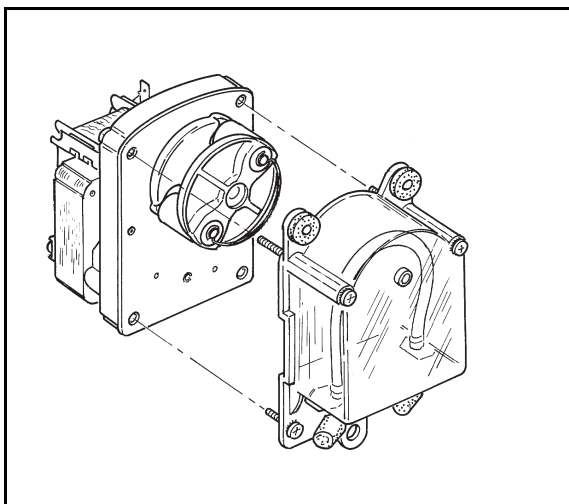
If the manufacturer's instructions are not available then about **2 to 3 milliliters** of liquid detergent per **liter** of wash water should be added in the main wash cycle.

- Example:

7 liters wash water x dispensed quantity per liter = Dispensed quantity in milliliters

7 x 2 milliliters = 14 milliliters detergent dispensed

## 4.2 Replacing the Dispenser Pump Hose Complete With Pump Cap



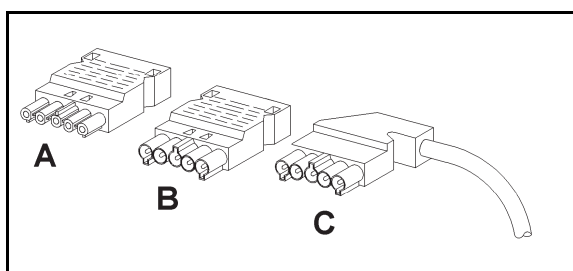
**Fig. 8:** Dispenser Pump Hose Replacement Kit

- ✂ Remove the dispenser pump from the DOS G 60 dispenser module housing.
- ✂ Replace the dispenser pump cap with pre-installed dispenser pump hose.
- ✂ When re-installing, ensure that all rubber seals are seated correctly.

### 4.3 Connecting the Connection Plug for DOS Modules from Series C to DOS Modules from Series G

**Note**

If a C-series DOS dispenser module is to be connected to a G 7881, then the connection cable must be replaced with a connection cable with angled plug (available from the Spare Parts department). If a straight plug is used instead of an angled version, then it may be necessary to knock out a 1.6-inch (four-centimeter) hole in the wall where it is contacted by the plug, as the machine has a depth of 23.6 inches (60 centimeters).



**Fig. 9: Plug Types**

- |   |   |
|---|---|
| A | Socket (mat. no. 05082410, April 2004)  |
| B | Straight plug (mat. no. 05082420, April 2004)   |
| C | Angled plug, only for prefabricated connection cables (mat. no. 04966210, April 2004) |

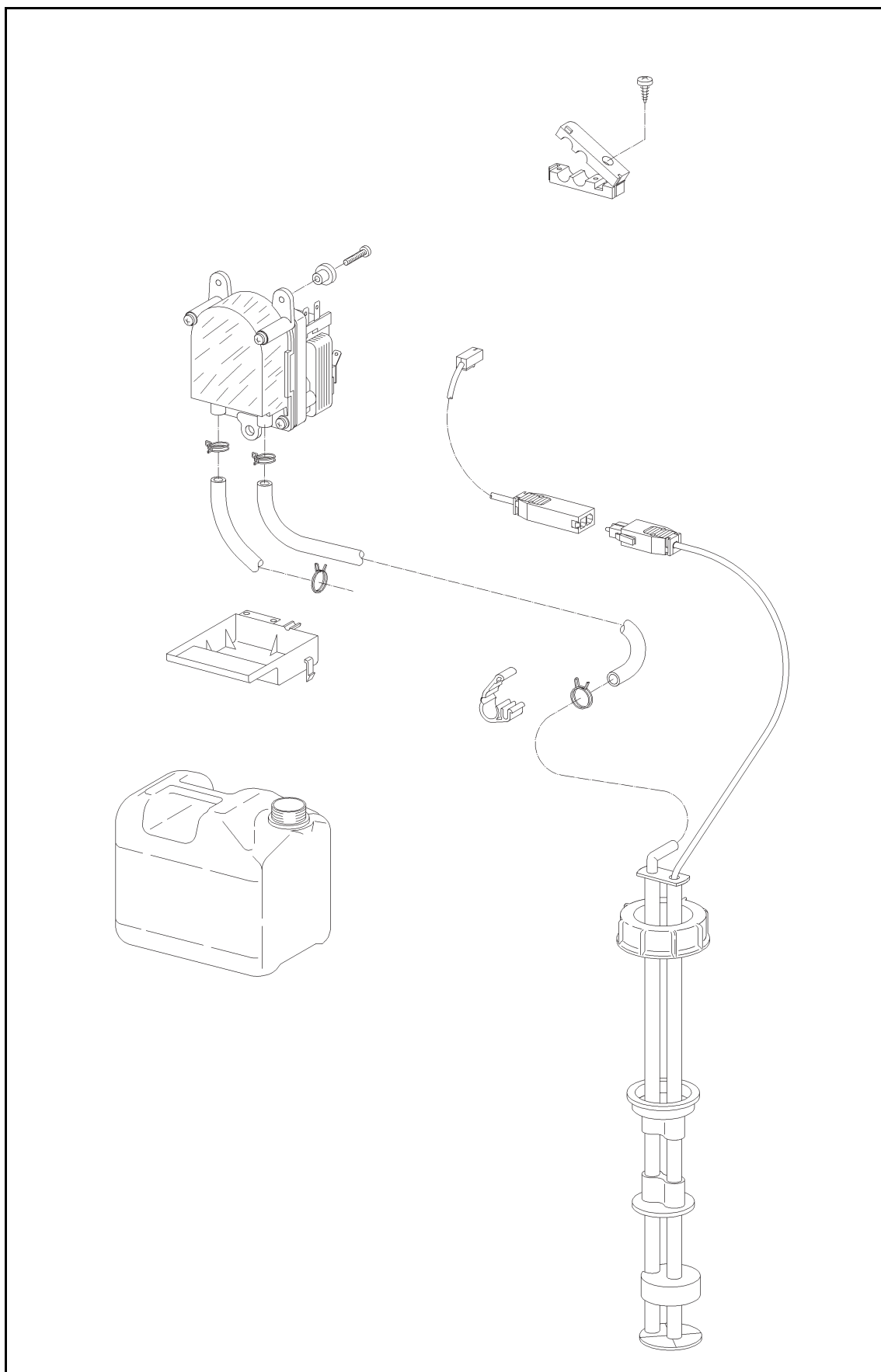
- ✂ Cut off old pins.
- ✂ Insulate the cable and crimp the wire ends.
- ✂ Connect the new pins according to the appropriate wiring diagram. See 091 Fig. 3 and 091 Fig. 4.

**Warning!**

Do not connect any voltage to the fill-level sensor!

- ✂ Secure the strain relief.

## 092 Liquid Dispensing



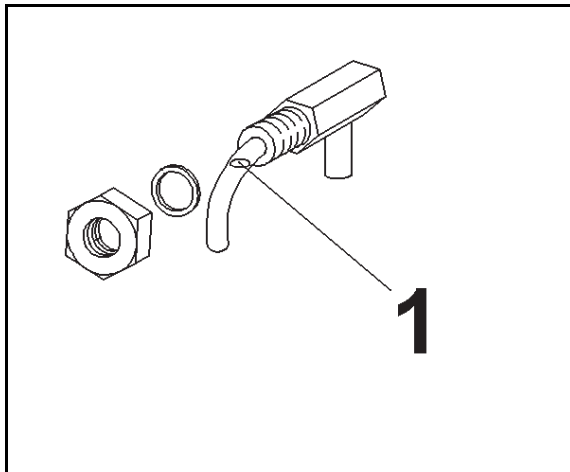
## 4 Service

### 4.1 Retrofitting Dispenser Hoses When Using MIC Carts

G 7882, G 7882 CD

#### Warning!

In order for dispensing quality to meet the special requirements for cleaning microinstruments (e.g., in ophthalmology), the G 7882 dispensing system **must** be retrofitted with **smaller hoses (3 mm diameter)** for the **use of ophthalmology carts (e.g., E 429 and E 440)**. Machines to be retrofitted are those which were not equipped as standard with thinner hoses (and whose hoses are missing the ventilation hole on the dispensing nozzle; see 092 Fig. 1, Pos. 1).



**Fig. 1:** New Dispensing Nozzle

Refer to conversion and fitting instructions mat. no. 06704470.

- ✂ Make the rear panel of the machine accessible.
- ✂ Pull out the dispensing drawer.
- ✂ Unscrew dispensing nozzles DOS 1 and DOS 3 from the rear panel.
- ✂ Install the new dispensing nozzles, **mandatory** for efficient dispensing function with the thinner hose. The old seals must not be reused.
- ✂ Replace the old dispensing hose on the pressure side of the dispensing pump with the new thinner hose (shortened to the length of the old hose). The Y-piece sits directly behind the pump.

#### Warning!

For prefabricated Y-pieces, each hose connection has a different diameter.

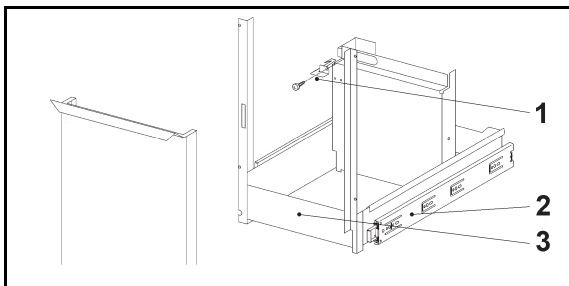
- ✍ After installing the new hoses, access the “DOS fill” parameter in the programming menu and reduce the fill amount to 35 millimeters, since the new hoses are significantly thinner than the old ones.

## 093 Dispenser Pump, Container

G 7882 CD, G 7883 CD

### 4 Service

#### 4.1 Removing the Drawer with Drip Tray



**Fig. 1:** Drip Tray with Holding Bracket

- |   |                 |
|---|-----------------|
| 1 | Holding bracket |
| 2 | Drawer guides   |
| 3 | Drip tray       |

- ✂ Removing the Drying Unit Container, 095 4.3.
- ✂ Loosen the retaining clips for connection cables and hoses.

#### 4.2 DOS 60 and/or DOS 10 Dispenser Pump Removal

- ✂ Remove the drawer; see Removing the Drawer with Drip Tray, 093 4.1
- ✂ Remove the three retaining screws from the top of the appropriate dispenser pump.
- ✂ Remove the dispenser pump.
- ✂ Remove the hose clips using Corbin pliers and pull off the hoses.
- ✂ Disconnect the plug contacts.
- ✂ Reassemble by following these instructions in reverse order.

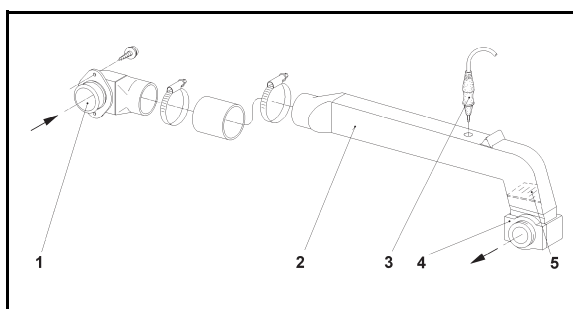


## 095 Drying Unit (TA) Container

G 7882 CD, G 7883 CD

### 2 Function

#### 2.1 Drying Unit Air Paths



**Fig. 1:** Air Path from Drying Unit to Cabinet

- |   |  |
|---|--|
| 1 | Air path intake (angled duct piece) from drying unit fan |
| 2 | Air duct on rear of machine                              |
| 3 | External air temperature sensor (NTC)                    |
| 4 | Air path output to cabinet                               |
| 5 | Non-return flap  |

To prevent suds from entering the air path from the drying unit, a spring-loaded non-return flap (095 Fig. 1, Pos. 5 ) is installed in the duct just before the output to the cabinet (095 Fig. 1, Pos. 4).

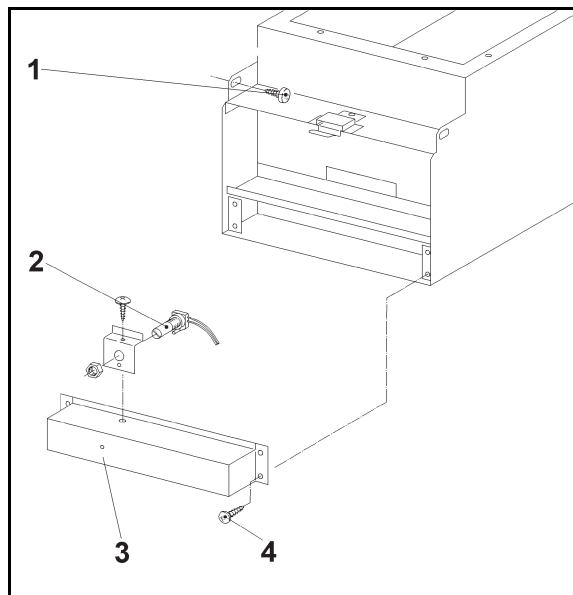
#### 2.2 Filters

The drying unit for the G 7882 and 7883 CD is fitted with two filters. The first is a coarse filter for pre-filtering the air taken in and the second a high-capacity submicron particulate air filter (microfine filter) behind the fan in the air circuit. This microfine filter **must always be installed**, even in clean rooms with a filtered air supply. The filters must be replaced after their given lifetime has expired but it should also be noted that unusual ambient conditions can greatly reduce the filter life.

- Coarse filter life: approximately 100 hours
- Microfine filter life: approximately 500 hours

For specific filter life information see the appropriate operating instructions. The microfine filter may only be replaced by an authorized Miele dealer or the Miele Service Department. Correct function is only guaranteed with a genuine Miele HEPA, classification 12/13 filter. Any filter change must be recorded via a sticker on the drying unit.

## 2.3 Setting the Fan Speed (Air Throughput)



**Fig. 2:** Drying Unit with Potentiometer

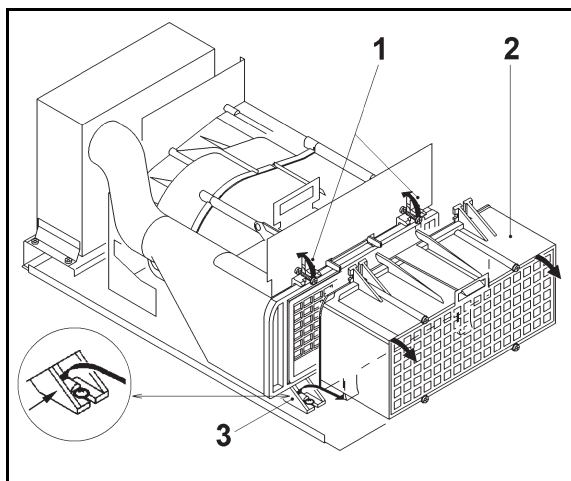
- |   |                                      |
|---|--------------------------------------|
| 1 | Drying unit retaining screw          |
| 2 | Potentiometer (220k $\Omega$ linear) |
| 3 | Hole for setting fan speed           |
| 4 | Drying unit fascia retaining screw   |

Potentiometer 1R32 (see wiring diagram 096 Fig. 2) can be used to adjust the speed of the fan motor and hence the air throughput of the drying unit within certain preset limits. Turn the potentiometer clockwise to increase the speed and counterclockwise to decrease the speed. The factory setting is such that a pressure increase of approximately 0.1 pounds per square inch (6 millibars) exists in the cabinet with the fan in operation. Modifications to this should only be made in exceptional cases as on-site it is not possible to measure the pressure or fan speed. If the potentiometer becomes defective, the fan continues to operate with a lower nominal speed.

## 4 Service

### 4.1 Coarse Filter Replacement

- ✚ Open the detergent pullout drawer.
- ✚ Loosen the two upper retaining screws (095 Fig. 3, Pos. 1) and tilt them upwards.
- ✚ Tilt the coarse filter housing (095 Fig. 3, Pos. 2) forwards and lever it free of the lower retainers (095 Fig. 3, Pos. 3).
- ✚ Press down on the center tab to open the door of the filter housing and remove the perforated plate.
- ✚ Remove the coarse filter and install a new one. The smooth filter surface must face towards the rear.
- ✚ Install the perforated plate in place at the bottom and press it into position at the top.
- ✚ Replace the coarse filter housing, ensuring that it is correctly seated in its lower retainers.
- ✚ Close the detergent pullout drawer.

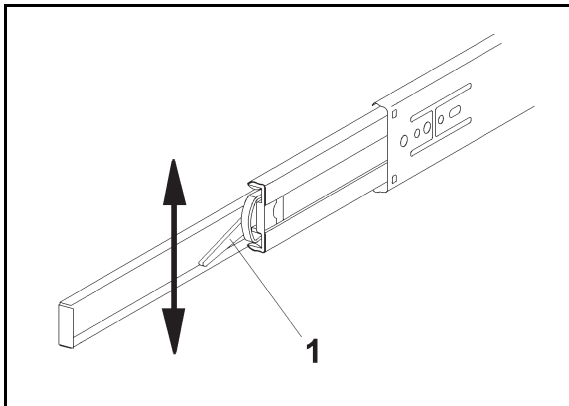


**Fig. 3: Coarse Filter Housing Removal**

## 4.2 Removing Potentiometer 1R32

- ✂ Open the left drawer.
- ✂ Remove the drying unit fascia retaining screws, 095 Fig. 2, Pos. 4.
- ✂ Remove the drying unit fascia. Disconnect the connection plug for the potentiometer, 095 Fig. 2, Pos. 2.
- ✂ Remove the holder bracket with potentiometer.
- ✂ Remove the potentiometer locknut.
- ✂ Reassemble by following these instructions in reverse order.

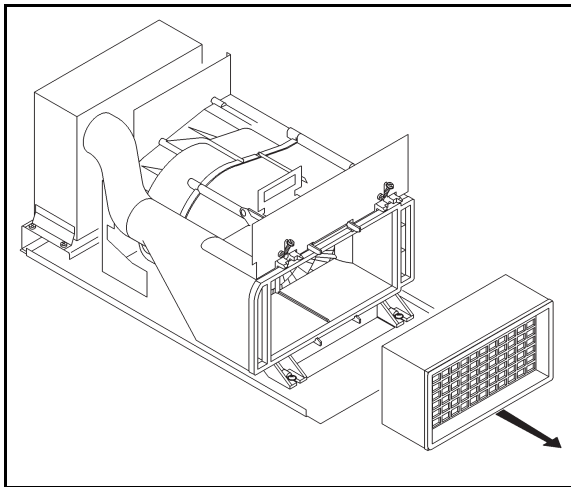
## 4.3 Removing the Drying Unit Container



**Fig. 4:** Drawer Guide with Lever

- ✂ Disconnect the unit from the power supply.
- ✂ Close the door.
- ✂ Fully open the left drawer with drip tray.
- ✂ Remove storage containers.
- ✂ Remove the side holding bracket, 093 Fig. 1, Pos. 1.
- ✂ Now pull out the drawer further until the locking levers, 095 Fig. 4, Pos. 1, in the guide runners are visible.
- ✂ Lift the lever in the right guide upwards and press the lever in the left guide downwards and pull out the drawer to its end stop.
- ✂ Remove the left retaining screw, 095 Fig. 2, Pos. 1, from the drying unit.
- ✂ Pull out the drying unit container halfway and disconnect the top plug connection (connector X5/2), 095 Fig. 5, Pos. 1.
- ✂ Remove the drying unit container.
- ✂ Reassemble by following these instructions in reverse order.

## 4.4 Microfine Filter Replacement



**Fig. 5: Drying Unit Container with Filters**

- ✂ Open the detergent pullout drawer.
- ✂ Remove the coarse filter housing as outlined in Coarse Filter Replacement, 095 4.1, Steps 2 and 3.
- ✂ Remove the microfine filter. See 095 Fig. 5. Install a new microfine filter.

### Note

When re-installing, ensure that the filter rubber seal is properly seated on the holder in the drying unit container. To secure the filter turn both retainers simultaneously towards the filter.

- ✂ Replace the coarse filter housing, ensuring that it is correctly seated in its lower retainers (095 Fig. 3, Pos. 3).
- ✂ Close the detergent pullout drawer.
- ✂ Fill out the sticker and attach it in the appropriate place.

## 096 Drying Unit, Electrical Details

G 7882 CD, G 7883 CD

### 1 Technical Data

Stage 1 (basic load)	700W
Stage 2 (controlled load)	1100W

**Table 1:** Heater Bank R16 Data

## 2 Function

### 2.1 Fan Motor M2

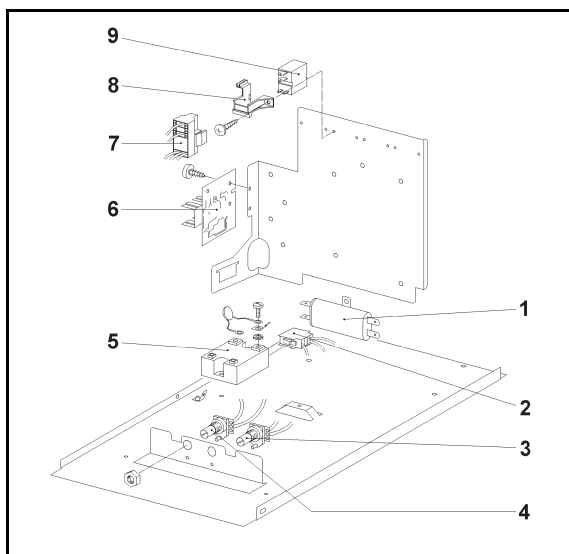
The fan is a 240VAC series-wound motor with brushes. The maximum speed is 23000 rpm. A thermal cut out for winding protection is integrated in the motor, and will reset automatically a few seconds after it has tripped. **The brushes and winding protection cannot be replaced separately.** When the brushes are worn out (after approximately 2500 hours of operation), the motor remains stationary and must be replaced.

### 2.2 Fan and Heater Bank Control

add pic 6002991

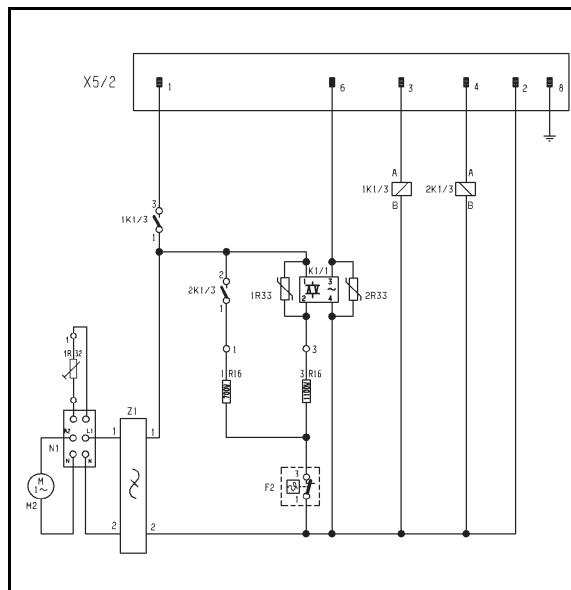
1 Position of terminal block X5/2 2 Relay 1K1/3 3 Relay 2K1/3

Position of Terminal Block and Relays



**Fig. 1:** Electronic Components in the Drying Unit

- |   |  |
|---|--|
| 1 | Interference suppression capacitor, Z1           |
| 2 | Connection plug to heater bank                   |
| 3 | Potentiometer                                    |
| 4 | Electronic relay, K1/1                           |
| 5 | Fan speed module N1 with connection to fan motor |
| 6 | Relay plug (wiring harness)                      |
| 7 | Relay holder                                     |
| 8 | Relay  |



**Fig. 2: TA-7 Drying Unit Control Wiring Diagram**

The control for the fan and heater bank is under the base insert of the drying unit container. The live supply L for fan M2 and heater bank R16 is from terminal 1 of plug connector X5/2 via the make contact of relay 1K1/3. The 2-stage heater bank, 096 Fig. 7, Pos. 2, has a basic and a controlled load (heater element). The basic load is activated via electronic relay K1/1. Temperature limiter F2 limits the heater power of the heater bank. It trips and opens the heating circuit at approximately 284°F (140°C) and resets and switches back on when the temperature has cooled to approximately 257°F (125°C).

### Note

The order of individual plug contacts at plug connector X5/2, 095 Fig. 5, Pos. 1, shown in the wiring diagram does not represent the real situation. The actual reference point is plug contact 8, the green-yellow ground lead. From here the plug contacts are numbered in descending order (7, 6, 5, and so on).



## 3 Fault Repair

### 3.1 Drying Unit Fan and Heater Bank Inoperative

#### Cause

Supply voltage not present at plug contacts 1 and 2 (plug connector X5/2).

#### Remedy

- ✎ Check the voltage supply to the drying unit at plug connector X5/2, plug contacts 1 (L) and 2 (N).
- ✎ If no voltage is present, check other plug contacts and connections in accordance with the wiring diagram. L1 and N are applied to the drying unit via main switch S2 and door switch 1S4.

#### Cause

Relay 1K1/3 not activated.

#### Remedy

- ✎ In the service mode, 070 2.9.4 **S 24**, Checking Outputs 12 - 19, check output 16. Supply voltage must now be present between contacts 3 (L) and 2 (N) of the plug connector X5/2.
- ✎ If no voltage is present, see No Voltage for Relay Solenoid 1K1/3 in Drying Unit (TA), 080 3.1.
- ✎ If voltage is present, remove the base insert; see Replacing Electronic Components Under the Base Insert, 096 4.3.
- ✎ Check relay 1K1/3, 096 Fig. 1, Pos. 2 (contacts, continuity, solenoid, etc.).
- ✎ Replace the relay, if necessary.

## 3.2 Drying Unit Fan Does Not Start

### Cause

Fan motor winding defective.

### Remedy

- ✂ See Replacing Electronic Components Under the Base Insert, 096 4.3.
- ✂ Check motor winding for continuity with an ohmmeter.
- ✂ Replace the fan, if necessary.

### Cause

Fan motor brushes worn out (life approximately 1000 hours).

### Remedy

- ✂ Fan Motor Removal, 096 4.1.

### Cause

Fan thermal cutout defective.

### Remedy

- ✂ Fan Motor Removal, 096 4.1.

### Cause

Speed control N1 defective.

### Remedy

- ✂ Remove the base insert; see Replacing Electronic Components Under the Base Insert, 096 4.3.
- ✂ Disconnect the two fan connections, 096 Fig. 1, Pos. 5, at the speed control.
- ✂ Connect the fan directly to the power supply between interference suppression capacitor Z1, 096 Fig. 1, Pos. 3, and the speed control. If the fan operates, the speed control is not in order.
- ✂ Replace the speed control.

### 3.3 Drying Unit Fan Operates Too Slowly

#### Cause

Potentiometer 1R32 defective or plug connections open-circuited.

#### Remedy

- ✂ Check the potentiometer and its connections; see Removing Potentiometer 1R32, 095 4.2.
- ✂ Replace the potentiometer, if necessary.

### 3.4 Air From Drying Unit Is Not Warm

#### Symptom

Heater bank in drying unit container inoperative.

#### Cause

Thermostat has no continuity.

#### Remedy

- ✂ Check thermostat for continuity with an ohmmeter; see Replacing Heater Bank Thermostat F2, 096 4.5.
- ✂ Replace the thermostat, if necessary.

#### Cause

Heater bank defective.

#### Remedy

- ✂ Check heater bank for continuity with an ohmmeter; see Removing Heater Bank R16 from the Drying Unit, 096 4.4.
- ✂ Replace the heater bank, if necessary.

#### Cause

Relay 2K1/3 (basic load) not activated.

#### Remedy

- ✂ If no voltage is present, disconnect plug 13 and check output 14 in service mode, 070 2.9.4 **S 24**, Checking Outputs 12 - 19.
- ✂ If voltage is still not present, check the voltage supply for EZL 081 via main switch S2 and door contact switch 1S4 at plug 13, contact 3 (L1) and 4 (N).

- ✂ If voltage is present, remove the base insert; see Replacing Electronic Components Under the Base Insert, 096 4.3.
- ✂ Check relay 2K1/3, 096 Fig. 1, Pos. 6 (contacts, continuity, solenoid, etc.).
- ✂ Replace the relay, if necessary.

### **3.5 Drying Temperature Not Reached**

#### **Cause**

Relay K1/1 (controlled load) not activated.

#### **Remedy**

- ✂ If no voltage is present, disconnect plug 13 and check output 14 in service mode, 070 2.9.4 **S 24**, Checking Outputs 12 - 19.
- ✂ If voltage is still not present, check the voltage supply for EZL 081 via main switch S2 and door contact switch 1S4 at plug 13, contact 3 (L1) and 4 (N).
- ✂ If voltage is present, remove the base insert; see Replacing Electronic Components Under the Base Insert, 096 4.3.
- ✂ Check relay 1K1, 096 Fig. 1, Pos. 1 (contacts, continuity, solenoid, etc.).
- ✂ Replace the relay, if necessary.

### **3.6 Poor Drying Results**

#### **Cause**

Jammed non-return flap.

#### **Remedy**

- ✂ Remove the air duct.
- ✂ Check that the spring-loaded non-return flap is not jammed. It must open and close easily.

#### **Cause**

Too little air throughput.

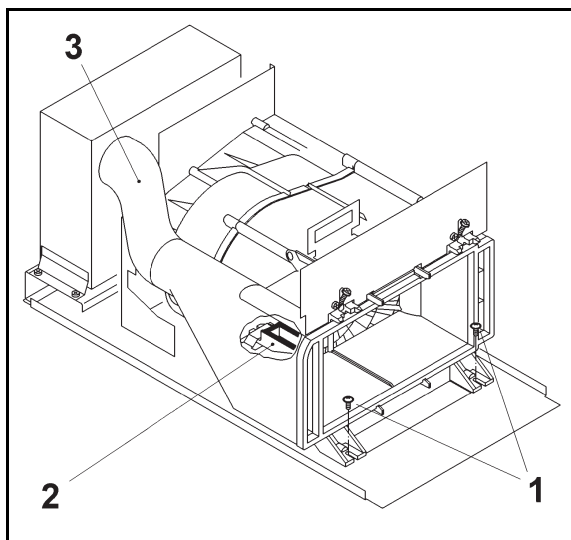
#### **Remedy**

- ✂ See Drying Unit Fan Operates Too Slowly, 096 3.3 or Air From Drying Unit Is Not Warm, 096 3.4.

## 4 Service

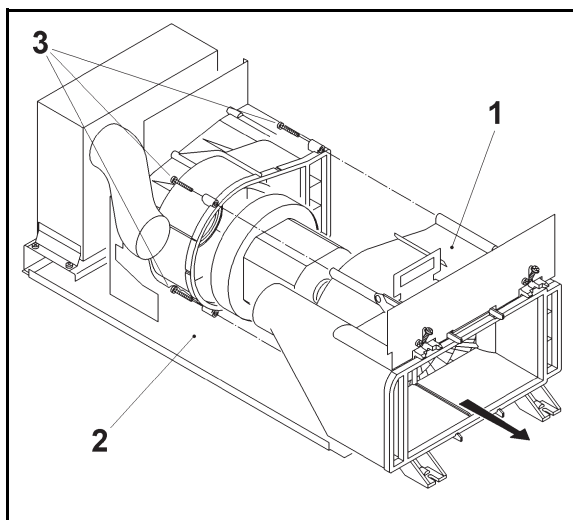
### 4.1 Fan Motor Removal

- ✂ Removing the Drying Unit Container, 095 4.3.
- ✂ Remove the microfine filter. See Section 5.29.
- ✂ Loosen the clamps on the connection hose (Figure 5-22, Item 3), and disconnect the hose.
- ✂ Remove the air duct screws; see Figure 5-22, Item 1.
- ✂ Remove the solid-state relay screws; see Figure 4-23, Item 4.
- ✂ Remove the complete air and intake channel unit, with motor, from the base plate (Figure 5-22, Item 2).



**Fig. 3: Fan Motor Removal - Preparation**

- ✂ Remove the three air intake channel screws; see Figure 5-23, Item 3.
- ✂ Disconnect the motor connection plug. Remove the motor.

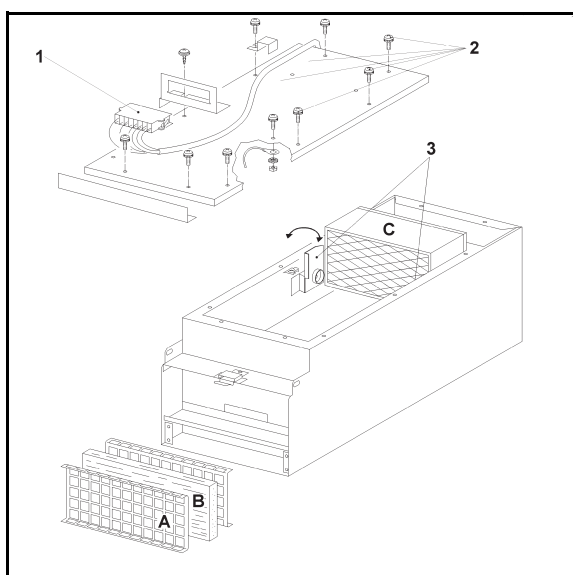
**Fig. 4: Fan Motor Removal**

## 4.2 Relay Removal

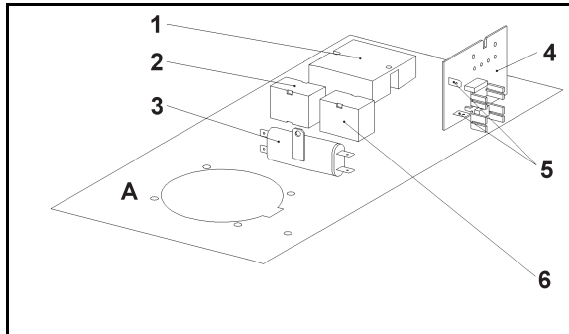
- ✂ Removing the Drying Unit Container, 095 4.3.
- ✂ Unclip the plug on the appropriate relay; see Figure 4-22.
- ✂ Remove relay holder screws. Remove the relay.

## 4.3 Replacing Electronic Components Under the Base Insert

- ✂ Removing the Drying Unit Container, 095 4.3.
- ✂ Remove the retaining screws, 096 Fig. 5, Pos. 2, and remove the lid.

**Fig. 5: Drying Unit Container with Filters**

- ✂ Remove the two screws securing the fan cover. Remove the fan cover.
- ✂ Remove the microfine filter; see Microfine Filter Replacement, 095 4.4.
- ✂ Remove the retaining screws from the base insert, 096 Fig. 6, Pos. A.



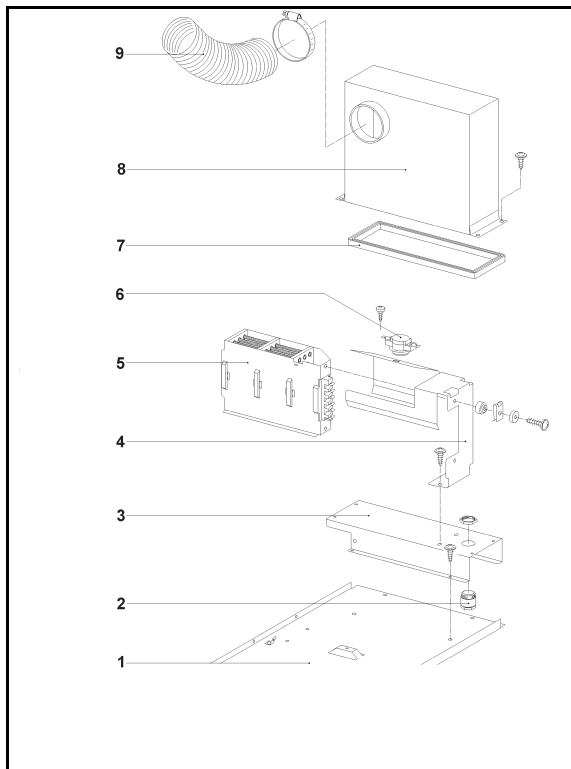
**Fig. 6:** Base Insert with Controls

- ✂ Remove the base insert and turn it over.
- ✂ Disconnect the plug connections and remove the screws securing the part to be replaced.
- ✂ Reassemble by following these instructions in reverse order.

**Note**

When re-installing the base insert, ensure that electrical connections are not pulled across sharp edges or have their insulation otherwise damaged.

#### 4.4 Removing Heater Bank R16 from the Drying Unit



**Fig. 7:** Heater Bank with Thermostat

1 Base plate 6 Temperature limiter F2 2 Cable grommet 7 Heater bank seal 3 Heater bank base 8 Heater bank housing 4 Heater bank holder 9 Connection hose 5 Heater bank 1/3R16

- ✂ Removing the Drying Unit Container, 095 4.3.
- ✂ Remove the connection hose. See Figure 5-24, Item 9.
- ✂ Remove the heater bank base screws (Figure 5-24, Item 3) from under the base plate (Figure 5-24, Item 1).
- ✂ Remove the 4 screws from the heater bank housing. See Figure 5-24, Item 8.
- ✂ Remove the heater bank housing.
- ✂ Remove the two side screws (Figure 5-24, Item 4) from the heater bank (Figure 5-24, Item 5).
- ✂ Disconnect the connection plug.
- ✂ Reassemble by following these instructions in reverse order.



**Note**

When connecting the new heater bank, ensure that connections and bridges are not interchanged. When connecting the heater bank to its holder, check that the ceramic washers are installed correctly. Install the rubber seal (Figure 5-24, Item 7) correctly.

## 4.5 Replacing Heater Bank Thermostat F2

- ✂ Removing the Drying Unit Container, 095 4.3.
- ✂ Remove the connection hose. See Figure 5-24, Item 9.
- ✂ Remove the 4 screws from the heater bank housing. See Figure 5-24, Item 8.
- ✂ Remove the heater bank housing.
- ✂ Disconnect the thermostat connection plugs, 096 Fig. 7, Pos. 1.
- ✂ Remove the two side screws. Remove the thermostat. See Figure 5-24, Item 4.